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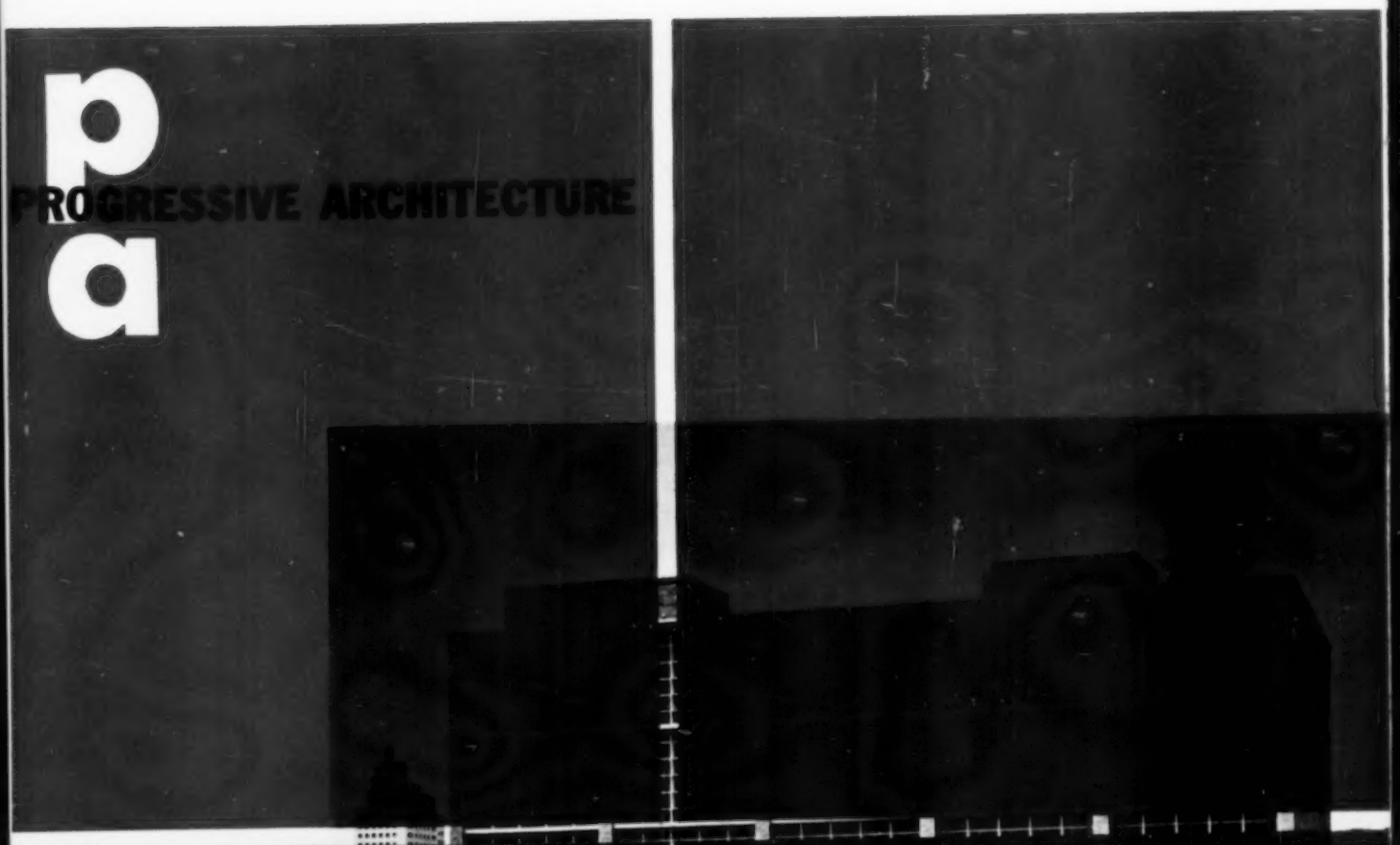

civic buildings

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february 1953

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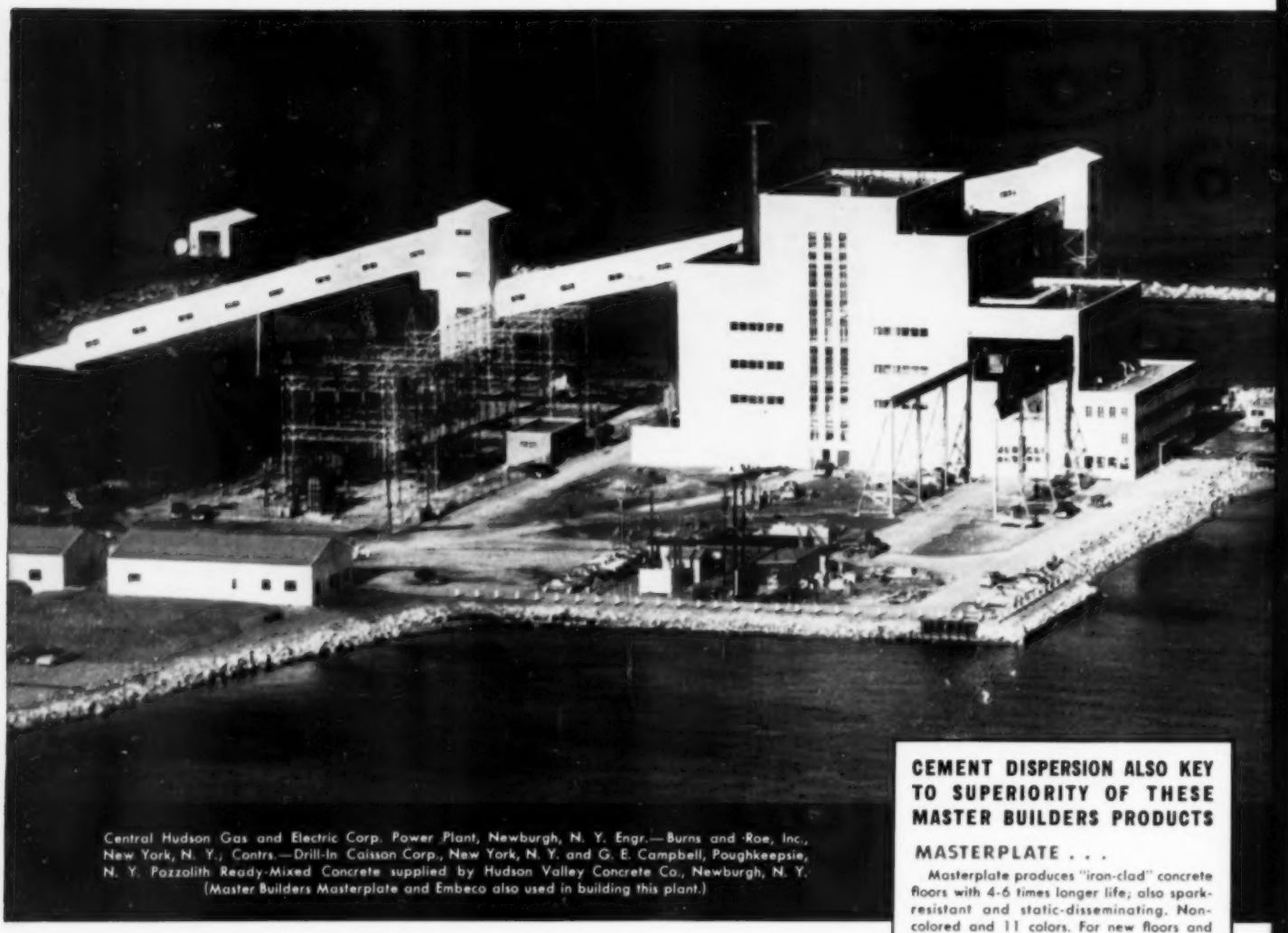

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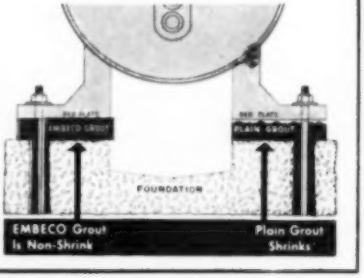

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PROGRESSIVE ARCHITECTURE

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pa newsletter

February 1953

1952 was the banner year in building; 1953 will top it. This prediction continues to come from all sources. Only question is whether there may be a mild mid-year recession—and optimism is outstripping pessimistic guesses in this respect.

Actual figures released for last year's building show $32.3 billions spent for new construction and approximately $10 billions for maintenance and repair. Government agencies point out that while this dollar volume sets a record, physical volume dropped somewhat from both 1950 and 1951 figures. For new construction, private work accounted for $21.8 billions; public work $10.5 billions.

The year-end statements from all manufacturing branches of the construction industry are equally optimistic. Rubber manufacturers, gleeful at lifting of restrictions, look for all-time-high consumption this year in natural and synthetics; the aluminum industry set new production records last year, expects NPA's expansion order to increase production capacity by 400 million pounds; steel in recent months has reached new postwar production peak, and industry expects to meet all defense and civilian needs in second half of year, with a substantial increase in fabricated structural steel shipments; copper production dropped slightly but is expected to pick up in '53, and "turn the corner" on present shortage; platinum and palladium (used in electrical products) continued last year and will continue this year at record high production level; gypsum industry, riding a boom, expects market to hold firm.

Present rate of home construction—something around a million units a year—must be kept up for at least ten more years if housing needs are to be met, according to HHFA pamphlet. This will mean an annual expenditure, in this field, of about $11 billions, from now until 1960. Repairs and alterations will account for approximately $1 billion of this annually, and farm residences $3/4 billion.

Spending for European military bases will not be as great this year as anticipated. Ridgeway's request was cut from $400 millions to $224 millions by North Atlantic Treaty Organization, when member nations insisted they would have to reduce their own defense spending to meet contributions for higher figure.

Carrier announces a competition for regional house designs incorporating year-round air conditioning. Prizes total $27,800 (first prize $5000; 30 regional prizes). Closing date April 10. Harold Sleeper is Professional Adviser; no Jury yet announced. Program, etc., write: Harold Sleeper, c/o Carrier Weathermaker Home Competition, 25 W. 44 St., New York 36, N. Y.

Ponderosa Pine announces competition for panel-door design, with $7600 in awards ($2500 top prize to $500 student prize) and possible purchase of designs entered, for mass production. Closing date is April 27. Information and blanks from Competition Headquarters, Ponderosa Pine Woodwork, 2907 W. Pico Blvd., Los Angeles 6, Calif. John Kewell is Professional Ad-

PROGRESSIVE ARCHITECTURE published monthly by REINHOLD PUBLISHING CORPORATION, 330 West 42nd Street, New York 36, N. Y. Ralph W. Reinhold, Chairman of the Board; Philip H. Hubbard, President and Treasurer; Fred. P. Peters, Vice President and Secretary; Gilbert E. Cochran, H. Burton Lowe, Merald F. Lue, William P. Winsor, Vice Presidents; Kathleen Starke, Assistant Treasurer. Executive and Editorial offices: 330 W. 42nd St., New York 36, N. Y. Subscriptions payable in advance. Subscription prices to those who, by title, are *architects, engineers, specification writers, designers, or draftsmen*, and to government departments, trade associations, members of the armed forces, college libraries, students, publishers, advertisers, prospective advertisers and their employees—$4.00 for one year, $6.00 for two years, $8.00 for three years. Above prices are applicable in U. S., U. S. Possessions and Canada. Latin America and Philippine Republic—$10.00 for one year, $16.00 for two years, $20.00 for three years. All other foreign subscriptions—$15.00 for one year, $25.00 for two years, $30.00 for three years. Single copy—$1.00. Printed by Publishers Printing Co., New York, N. Y. Copyright 1952, Reinhold Publishing Corp. Trade Mark Reg. All rights reserved. Reentered as Second Class Matter September 21, 1951, at the Post Office at New York, N. Y., under the Act of March 3, 1879. Volume XXXIV, No. 2, February, 1953. In Art Index.

viser; Jury—John Rex, Henry L. Wright, A. J. Del Bianco; Architect, Hunt Lewis; Industrial Designer, A. R. Tipton, for the Sponsor.

Friends of Fritz Gutheim will be sorry to hear that he is no longer connected with the A.I.A. Friends of the Institute will, equally, be sorry that the services of this able and energetic authority and writer on architecture, are no longer available at The Octagon.

Architects are invited to submit panels on church kitchen and dining areas for exhibit at International Churchman's Exposition in fall. Write: Joe Vancil, 19 S. La Salle St., Chicago 3, Ill.

Built in U.S.A.: Postwar Architecture is the title of both the major winter exhibition just opened at the Museum of Modern Art, New York, and a book illustrating U. S. work since 1945 published concurrently by the Museum.

Appointment of Jose Luis Sert as Professor of Architecture and Dean of Graduate School of Design at Harvard University, succeeding Joseph Hudnut, has been announced. Sert assumes his duties September 1. Internationally known as architect and city planner, he is President of C.I.A.M., honorary member of R.I.B.A., author, critic, lecturer.

New consumer magazine called Home Modernizing will be published twice a year by owners of Small Homes Guide.

Walter T. Rolfe, Architect of Texas, is a member of the U.S. National Commission for UNESCO, bringing A.I.A. representation back to this body.

Everett N. McDonnell, president of McDonnell & Miller, Chicago, receives this year's Anderson Award of the American Society of Heating and Ventilating Engineers, for outstanding work in that field.

National Gypsum Co., has acquired Asbestone Corp., up to now the largest independent manufacturer of asbestos-cement boards, shingles, siding.

One-story houses are the most popular, according to survey released by HHFA. Survey Research Center of U. of Michigan made the study of people who bought houses in 1949-50. Preference for one-story homes was shared by buyers at all price levels and age groups. In that period, 37% of buyers were under forty, half had incomes (1950 level) between $3000 and $5000, 70% of the buyers had children.

Brazil will hold its 2nd Biennial of Modern Art, with cash prizes for architecture submitted, at end of 1953. Exhibit, selection, and awards are under jurisdiction of Sao Paulo Museum of Modern Art, since Biennial will tie in with fourth centenary celebration of that city. Inquiries as to entries should be addressed to the Museum, Rua 7 de Abril, 230, Sao Paulo, Brazil.

Plastic pillows, transparent, filled with helium, and joined together to make a huge dome, may well cover cities or parts of cities in the future. So says Ambrose Richardson, architectural Prof. at U. of Illinois, who hopes to build such a dome over an acre of land if he can find a sponsor. Technically possible now, such coverings would provide sunlight for people living under them but exclude rain.

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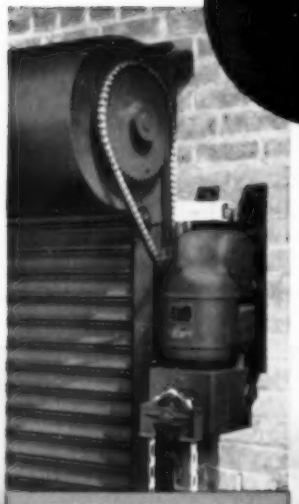

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Los Angeles

Henry L. Wright, A.I.A.
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A. J. Del Bianco, architect
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Hunt Lewis, industrial designer
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merits vs. rules

Dear Editor: It is perhaps somewhat late to enter the discussion begun by Sibyl Moholy-Nagy's "The Heritage of Cezanne," but I cannot help feeling that none of the answers that you have published, including the one by Robert Woods Kennedy, has succeeded in pointing out the weakness of Mrs. Moholy-Nagy's position.

Mrs. Moholy-Nagy assumes, and Kennedy does not question, several basic points that are neither probable nor universally agreed upon. Without these points the attack upon the "Fifteen Americans" collapses and we are forced to judge their painting on merits rather than according to any system of rules. The points that I have in mind might be stated as follows:

1. The only forms proper to painting are defined as sharp, rectilinear, precise, and related to simple and clear lines, planes, and solids.

2. Conversely, forms that are irregular, nongeometric, amorphous, undefined, and complex cannot be comprehended or controlled and hence have no place in art.

3. The first type of form springs from the intellect or the conscious mind.

4. The second type of form springs from the emotions or from the unconscious mind.

5. The intellect is "good" and constructive and should control an artist and his work, while the unconscious is "bad," a monster to be suppressed (at least on museum walls).

6. The purpose of art is to inspire or feed architecture (or perhaps architecture and other practical arts) and that success or failure in doing this is the measure of "good" and "bad" art.

All six of these assumptions appear to me to be absurd, yet they are the only basis on which Mrs. Moholy-Nagy establishes her points—and this without making any attempt to substantiate these assumptions. Those of us who enjoy the paintings that Mrs. Moholy-Nagy attacks and find them fully as valid as works of art as those of Cezanne or Mondrian (although not necessarily of the same stature) do not use a book of rules about paintings. We are willing to permit the artist to use any forms that he desires, including amorphous forms, complex forms, and accidental forms. We also realize that all human activities reflect both the conscious and the unconscious minds of the people involved; this indeed is the only content of any art that is of importance. It is naive to suppose that anyone (including Cezanne, Mondrian, and Mrs. Moholy-Nagy) has ever done anything that is not in part a reflection of his unconscious. Neither can anyone do anything that is solely a product of his unconscious. All paintings, geometric or amorphous, Bauhaus or "Fifteen Americans," are a product of the particular painter.

The frightening picture of the evil unconscious that some people like to build, with Freud as their basis, has no place in good psychological thinking at present. A Mondrian painting is as much an outpouring of the artist's unconscious as a Pollack is, and intellectual control is present in both cases. Although the nature of the unconscious in question and the nature of the control are very different, there is no basis for considering this a difference between "good" and "bad."

The fact that some modern buildings have elevations that look a little like Mondrian's paintings has set off a whole chain of exhibits and writings that attempt to prove some significant point about the relationship between painting and architecture. While this may be an interesting comparison to notice, no one has ever shown how either the painting or the architecture is in any way either better or worse for this relationship. There is no particular reason to believe that a relationship of similarity is necessary to the health of painting or of architecture. Perhaps relationships will, with the historians' hind-sight, become evident between paintings that Mrs. Moholy-Nagy deplores and the architecture that is yet to be realized—or perhaps it will be music, or drama, or physics that will show the parallel. In any case, this will have nothing to do with the merit of the painting. The idea of art as something intended to be "applied" is a curiously old-fashioned one and will never produce the art that will in long-range terms prove to be the greatest source of stimulation to constructive activities.

The fact of the matter is that Mrs. Moholy-Nagy has offered us no more than the assertion that she finds nothing of value in these paintings. This is her right, but her attempt to prove on a factual basis that there *is* nothing of value in these paintings is not and could not be successful. We sometimes laugh at the statement "I don't know about art but I know what I like," but it at least reflects a certain modesty; a willingness to offer a personal opinion at its face value. To surround an assertion of personal opinion with a complexity of historical fact and unsupported assumption only serves to disguise the nature of the judgment that has been made and to confuse those who are not prepared to see through the smoke screen that is thus created. Perhaps the smoke screen confuses its own creator, also, and prevents a good intellect from coming into contact with the vital activities of the contemporary artist.

JOHN F. PILE
New York, N. Y.

the round-robin

Dear Editor: In regard to your Round-Robin Critique of schools, may I say that I personally feel that it is an unusually democratic and direct approach to the problem of architectural criticism—frank and to the point—and extremely interesting to study the architects' rebuttals.

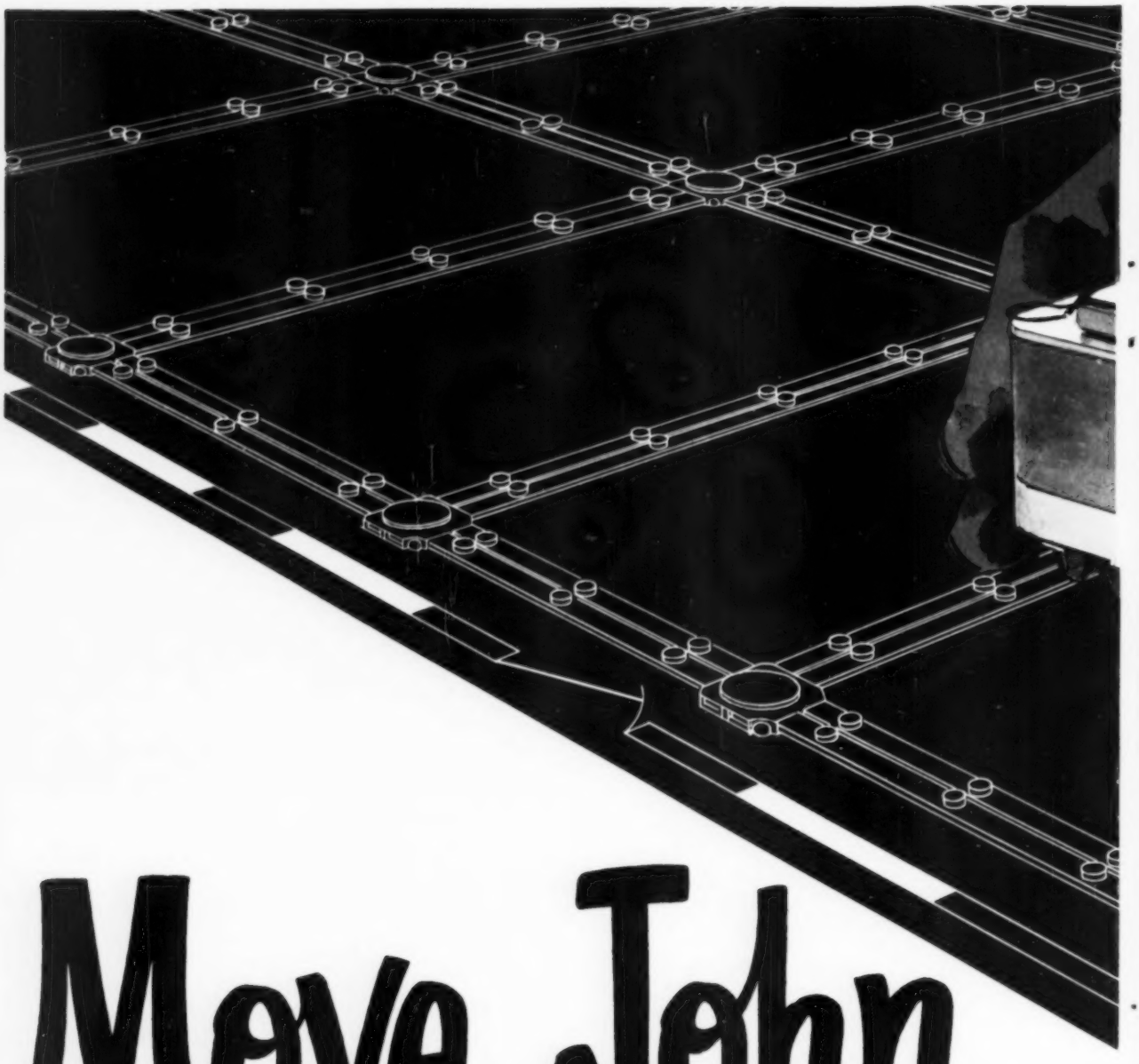
I particularly admire the high caliber of architectural firms that participate in the general excellence of the buildings.

I think I would hate to have one of our jobs put through this mill!

KARL KAMRATH
Houston, Tex.

Dear Editor: We have always believed that criticism of architectural work, so long as it is not flippant, is of enormous value to our profession. The most useful criticism comes from those who have tackled, more or less, the same problems.

(Continued on page 10)



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(Continued from page 7)

Purely editorial criticism fails in this and the sweeping tirades of such persons as Frank Lloyd Wright and Le Corbusier have very little value.

You have accomplished this in your Round-Robin Critique and I find it stimulating to the reader and believe that it has a tendency to keep architects on their toes.

T. Trip Russell
Miami, Fla.

Dear Editor: Although the presentation of the Round-Robin is most effective and thought provoking, I personally would have preferred the comments and criticisms limited to one project; or one trend in several projects; and the controversial points more fully criticized and refuted.

I feel that your development of the Round-Robin Critique is a very definite service to the profession and wish to offer my commendation to Progressive Architecture.

John M. Ware
Jackson, Miss.

Dear Editor: Regarding the Round-Robin Critique series I have found them to be most interesting and helpful.

It does seem unfortunate that when any professional analyzes another's work, he appears to lose the broad, stimulating aspects of the problem and becomes immersed in the unimportant details. It would be a greater asset to me if more thought was given to the fundamental principles of planning and design and less to the "run-of-the-mill" details.

I want you to know that P/A is doing a splendid piece of work for the profession under your tutelage.

Lester C. Tichy
New York, N. Y.

Dear Editor: The Round-Robin Critique has always seemed to me to result in more or less petty bickering rather than the thing it was intended to produce. This probably results from an inability on the part of the participants to give the time required for a full understanding of particular problems and for a full evaluation (impossible from photographs) of solutions. End result: skin deep conversation by stage fright victims.

Compare for instance the frightful results of an interchange between authors criticizing each other's efforts, or composers, or lawyers, or even editors, that is, in print.

Criticism is for critics and most of its virtue is derived from its objectiveness, and the measure of an editor is his ability to select and pull the right critics.

Donald Barthelme
Houston, Tex.

(Continued on page 12)

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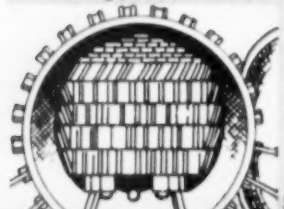

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p/a views

(Continued from page 10)

Dear Editor: Every architect's work should be given this Round-Robin Critique series and so benefit the profession. Maybe it should go beyond this limit and have the reader architects follow up a month later with their comment. It's a *good* idea and more power to you. After all, the practice of architecture cuts a professional off from criticism from co-professionals and he may get in a deep rut if he measures himself by the layman's standards.

VINCENT G. KLING
Philadelphia, Pa.

Dear Editor: Concerning the Round-Robin Critique on elementary schools we think that this sort of magazine reporting comes near being the finest. One never finishes learning in architecture and the criticisms offered in this manner are all constructive and therefore are full of information to the practitioner.

Since it has been our good fortune to be one of the participating architects on a previous discussion, we know that all the published matter is most tactfully handled. We ask you to give us more Round-Robin Critiques.

ARTHUR FEHR
Austin, Tex.

Dear Editor: The Round-Robin Critique in September 1952 P/A is an excellent contribution, for the practicing architect, to his understanding of the finished work. Although I think a place for the more inclusive criticism of the High Priest remains, the Critique by architects, while fragmentary, is an effective device for explaining the factors which have influenced the final design. Its greatest importance may lie in its power to attract attention to basic problems and solutions, rather than to the finished work—thus diminishing the alarming influence of the architectural magazines in their generation of clichés and even whole trends of imitation by the overly-impressionable!

CASPER F. HEGNER
Denver, Colo.

Dear Editor: I will do my best to give you an honest impression of the Round-Robin Critique September 1952 P/A.

Fortunately you do not require masterpieces to pick at, and the men selected to do the dissecting should have a great deal of fun.

I think that many good arguments are weakly defended, but that condition is very hard for you to control.

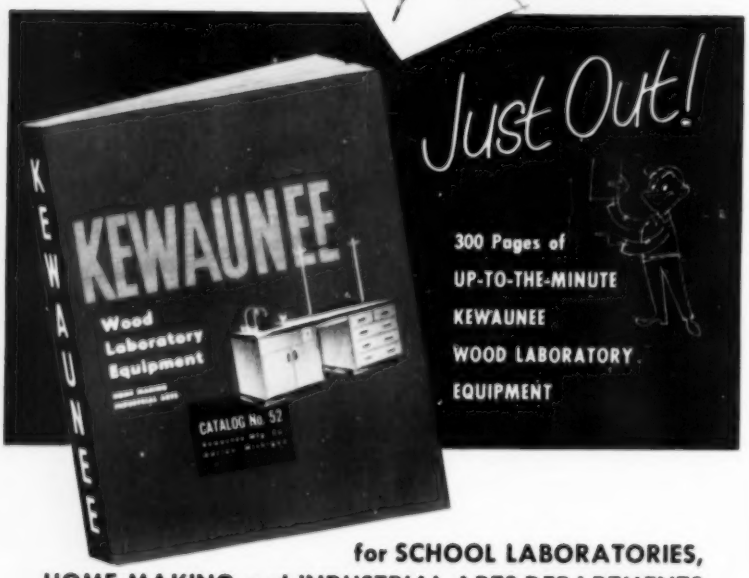
In general, I like your articles.

THOMPSON B. BURK
New Orleans, La.

Dear Editor: I was very much interested in the Round-Robin feature in September 1952 P/A and read it carefully. It seems to me that this sort of comprehensive criticism is more satisfactory than discussion by some particular High Priest architectural critic. The format is excellent.

(Continued on page 14)

a Helpful Book for any Architect



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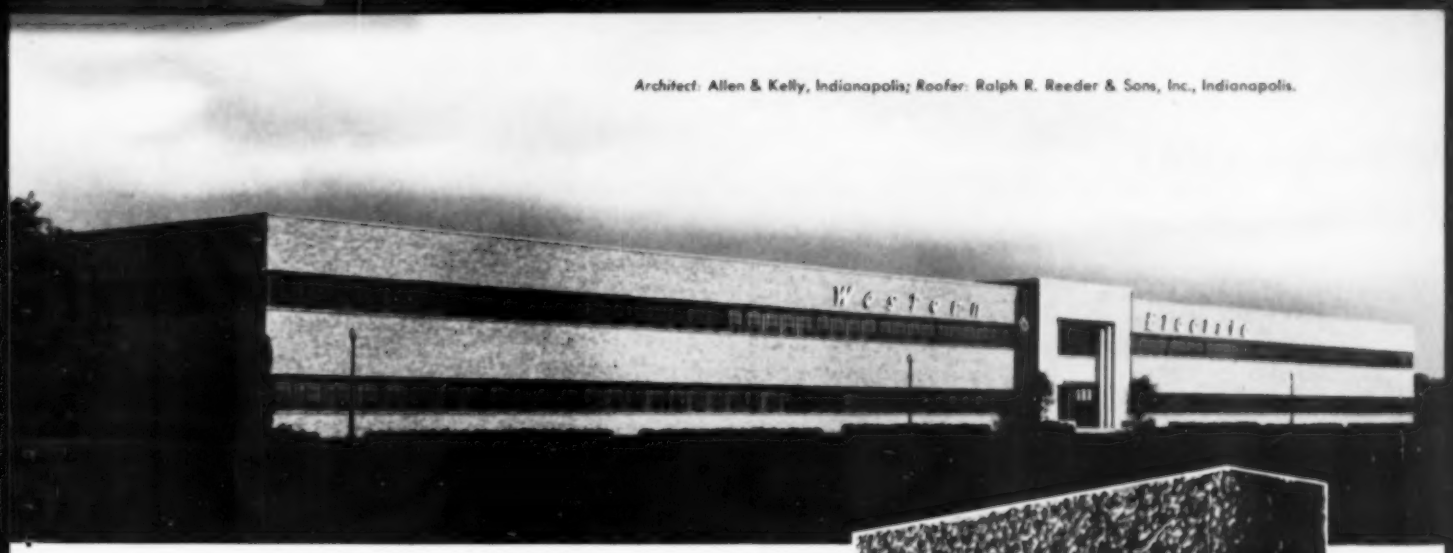

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J. Lloyd Allen

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(Continued from page 13)

particularly the use of two colors and the way you relate questions and answers to the plan.

I feel that the material can be used in architectural offices for study and comparison in the development of a related building design; and it should prove useful in discussions with clients because it pin-points and clarifies many common problems. It occurs to me that the client's opinion, either on the architect's side or the critic's might be valuable; or, in the case of schools, you might invite a well-known educator's comments.

These critiques are a real service to the profession, and since they are so clearly presented, I am sure they would give the layman a better understanding of the architect's approach. J. STANLEY SHARP
New York, N. Y.

Dear Editor: I have always found the Round-Robin Critique very interesting, though sometimes I have felt that one or another of the architects did not get the proper chance to answer back. In general I hope you will keep it up.

I have written you before about typography and you know how I feel about it. I still think your typography can be improved in the Round-Robin series to make it more readable and more attractive. I simply cannot tolerate page width lines of type. I just don't read them. I know that a page should be interesting, but I think that most of your pages are pretty much a jumble of rebuttals, comments, pictures, and captions. Could you try getting the rebuttals a little closer to the comments so they may be appraised at the same time? But as to the series—keep it up. Make them longer and don't pull the punches. L. MORGAN YOST
Kenilworth, Ill.

Dear Editor: The "Elementary School" article from September 1952 P/A is a most commendable effort to produce criticism and the technique involved seems to be the best that I have seen. The problems are obviously many and probably not all can be solved.

It was most helpful in the school issue to have complete plan drawings. The use of two colors of ink is a bright idea and does help to clarify.

ROBERT S. HUTCHINS
New York, N. Y.

Dear Editor: I find the Round-Robin on Elementary Schools just as helpful and stimulating to read (about work of other architects) as I have in the cases where you have involved our work. The technique of criticism and rebuttal certainly brings out first-hand knowledge about situations which are not usually mentioned when an architect is asked to describe his own work, let alone those cases where the Editor himself makes the comments. This is a good feature. Keep it up.

ROBERT E. ALEXANDER
Los Angeles, Calif.

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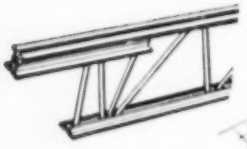

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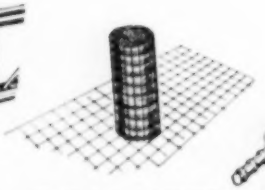

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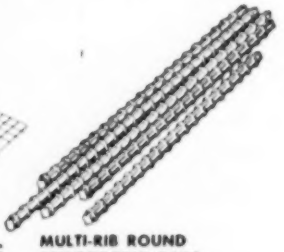

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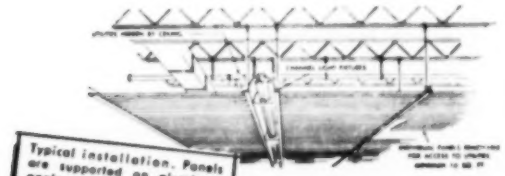

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28-block project for heart of San Francisco

Attacking blight in the strip along San Francisco's Geary Street traffic artery, from Franklin to Broderick, the Redevelopment Agency of the City and County, in co-operation with the Department of City Planning, has submitted a 28-block project for replacement of the deteriorated 19th Century blocks that have been overcrowded since they were seized as "temporary" shelter by thousands displaced in the earthquake and fire of 1906. The *Tentative Plan* reproduced (*below*) and careful restudy (*detail at larger scale, bottom of page*) indicate the determined effort to provide at a cost of some $40 millions better living conditions for about 9,300 per-

LEGEND

boundary of project area

LAND USES:

RESIDENTIAL:
- suitable for tall buildings
- other residential
- P suitable also for public use or parking

COMMERCIAL:
- office, laboratory, professional
- neighborhood & community shopping: general commercial

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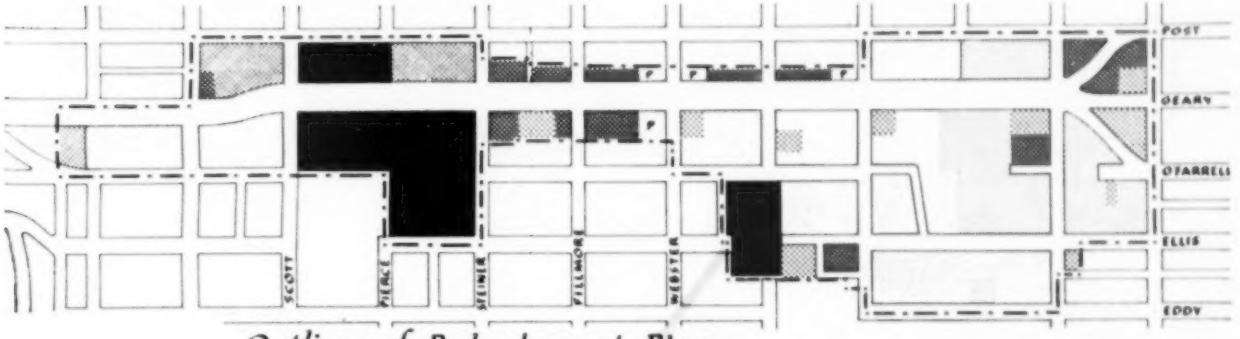
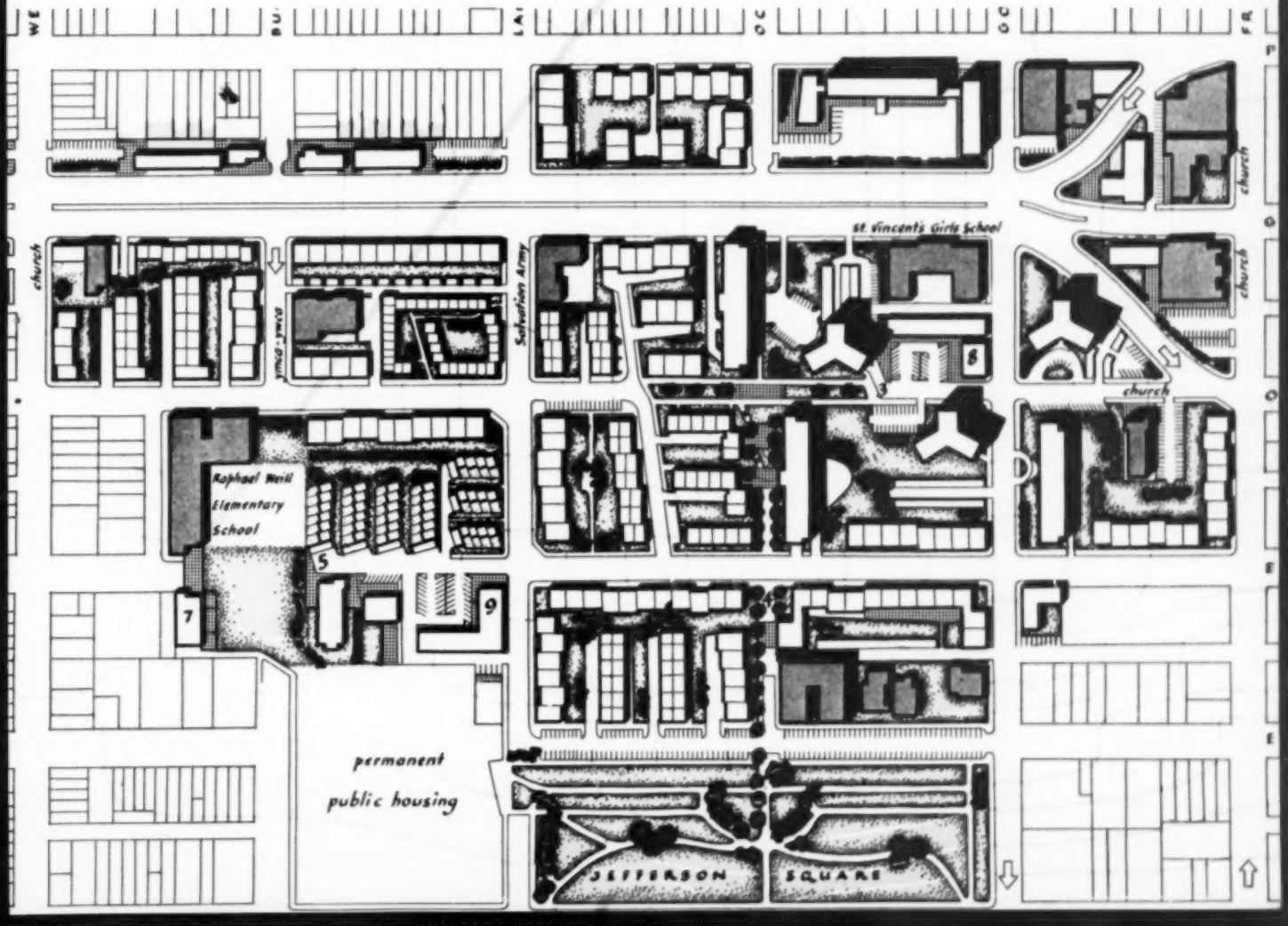
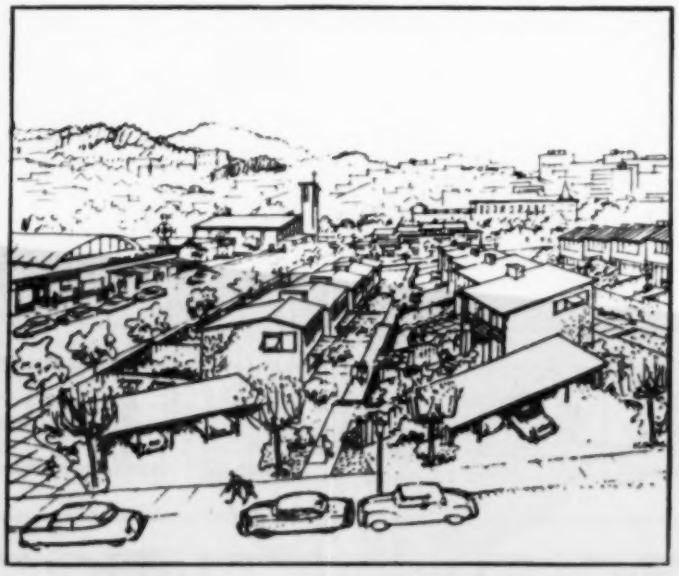


Outlines of Redevelopment Plan



Suggested tall buildings

Medium-height buildings (the biggest need)
Sketches: Vernon DeMars



Suggested low buildings

sons, with improved schools, community and shopping centers, and other amenities. At present, the area causes excessive health, police, fire, and municipal court costs. It is contemplated that private investments will total more than $30 millions, supplementing a City-County contribution of several millions for public improvements in the area and a Federal grant of nearly $6 millions to the City, to cover the net cost of the project.

Traffic congestion in the project area will be materially relieved by widening of Geary Street to expressway standards as a vital link in the San Francisco Trafficways Plan (already approved). Many of the large old houses in these blocks were originally well constructed, but they have been overcrowded so long that they defy rehabilitation. Some undesirable occupancies and general makeshift extensions of structures and the tenancy have made the area more and more a slum without air, light, or amenities deemed necessary by modern planning standards. And some businesses undesirable for a predominantly residential area have crept in, creating additional hazards.

High, medium, and low buildings (*sketches above*) to house families of a wide income range are proposed by the Design Consultants for this project—Vernon DeMars and Albert Roller, Architects, and Elmore Hutchison, Engineer. Although it is considered unlikely that a large number of present residents will wish to return to the project area following their rehousing during demolition and construction phases, such residents are to have the opportunity to select from the wide variety of new dwellings offered, both within the project

(Continued on page 20)

Schlage creates a jewel for modern homes

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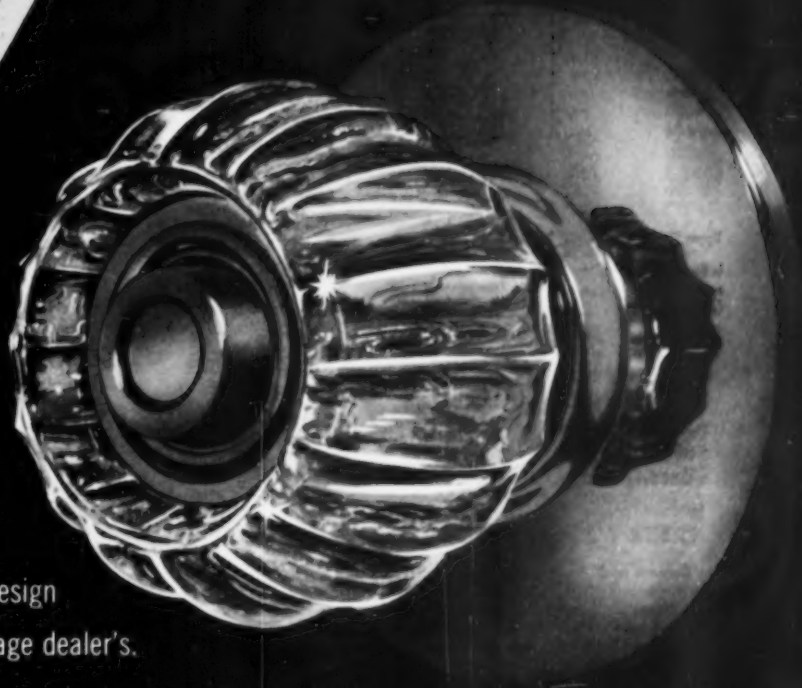

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(Continued from page 18)

area and the neighboring low-rent public housing areas currently proposed for construction.

The larger number of dwelling units would be privately constructed and the development of new parking areas, many new structures, etc., would be left to private enterprise.

Major improvements in the area, contemplated under the *Tentative Plan* and subject to conditions would include:

Widening of Geary Street and provision of diagonal access streets, to relieve traffic congestion;

Installation of street lighting, traffic signals, water mains, police boxes, and fire alarm boxes;

Expansion and improvement of Raphael Weill elementary school and playground;

Establishment of a community recreation center;

Conversion of Girls' High School to Benjamin Franklin junior high school;

Removal of old street car tracks.

Regarding development of new housing, the *Tentative Plan* report states:

"By far the larger portion of project area land will be sold for private residential building. Public housing is specifically excluded from redevelopment project areas by terms of the California Community Redevelopment Law. The *Tentative Plan* provides standards which allow multi-unit structures of various kinds from row dwellings to tall apartments to be built in the area. Sufficient land is available to provide sites for more than two thousand dwelling units, exact number depending on the combination of types of dwellings which builders will desire to build within the standards. Due to the close-in location and on the basis of past experience in similar areas in the city, it is expected that the greatest demand will be for small apartments and dwellings suitable for couples and small families or groups of single individuals.

"It is the hope and intent of the Redevelopment Agency that residential building in the Western Addition Redevelopment Project Area will provide dwellings available to families of a wide range of incomes. The Agency recognizes that because building may be accomplished under the relatively high cost conditions of the present day, the extent to which housing can be provided for lower income people may be limited. It should be noted that the San Francisco Housing Authority plans to build 600 apartments which it will rent exclusively to low income families at rents determined by the families'

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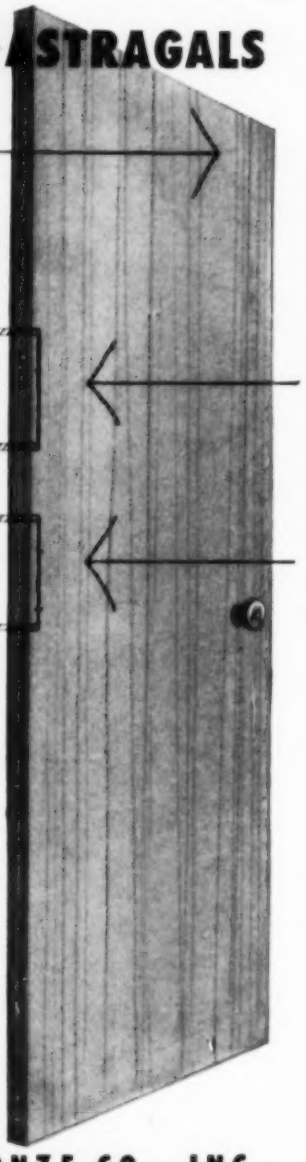

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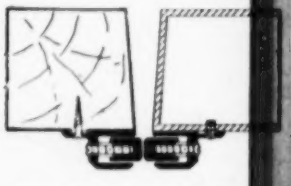
may be applied to either wood or hollow metal bevel doors, or as a stop bead.



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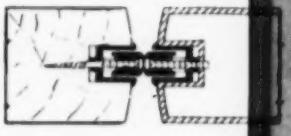
is for bullnose hollow metal or wood doors (double acting).



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(Continued from page 20)

income. These apartments will be located on two sites near the Redevelopment project (between Turk and Eddy Streets from Pierce to Divisadero, and between Turk and Ellis Streets between Laguna and Buchanan). The development schedule for these dwellings means that they should be available in time to provide housing for low income families which must be rehoused because of redevelopment. Generally speaking, it is expected that the range of rentals in the Redevelopment project area will resemble the rentals at which private building has made dwellings available through new construction in San Francisco during the past few years.

"Surveys by the Redevelopment Agency staff and the Department of City Planning, including all major new rental developments in the City completed within the past three years, indicate that the following rent ranges have been achieved for dwellings of various sizes by private builders using conventional financing and building methods:

Studio or two-room apartments	$70 to $100
One Bedroom Dwellings	75 to 120
Two-Bedroom Dwellings	80 to 130
Three-Bedroom Dwellings	100 to 150

(Rents include garbage collection and water but not other utilities)

"Agency studies based on current costs of construction show that typical apartments could be successfully built through conventional financing and operated by private management in the project area for rents in the lower part of the ranges cited above. Actual rents would be set by supply and demand.

"Successful private development in the project area will benefit the City financially. When fully developed, the redevelopment project area will represent a private investment of more than $30,000,000 in new values in land and buildings. It is estimated that on the basis of the present assessment practices and tax rate, that this will result in more than tripling the present annual tax return to the City and County of San Francisco from the project area."

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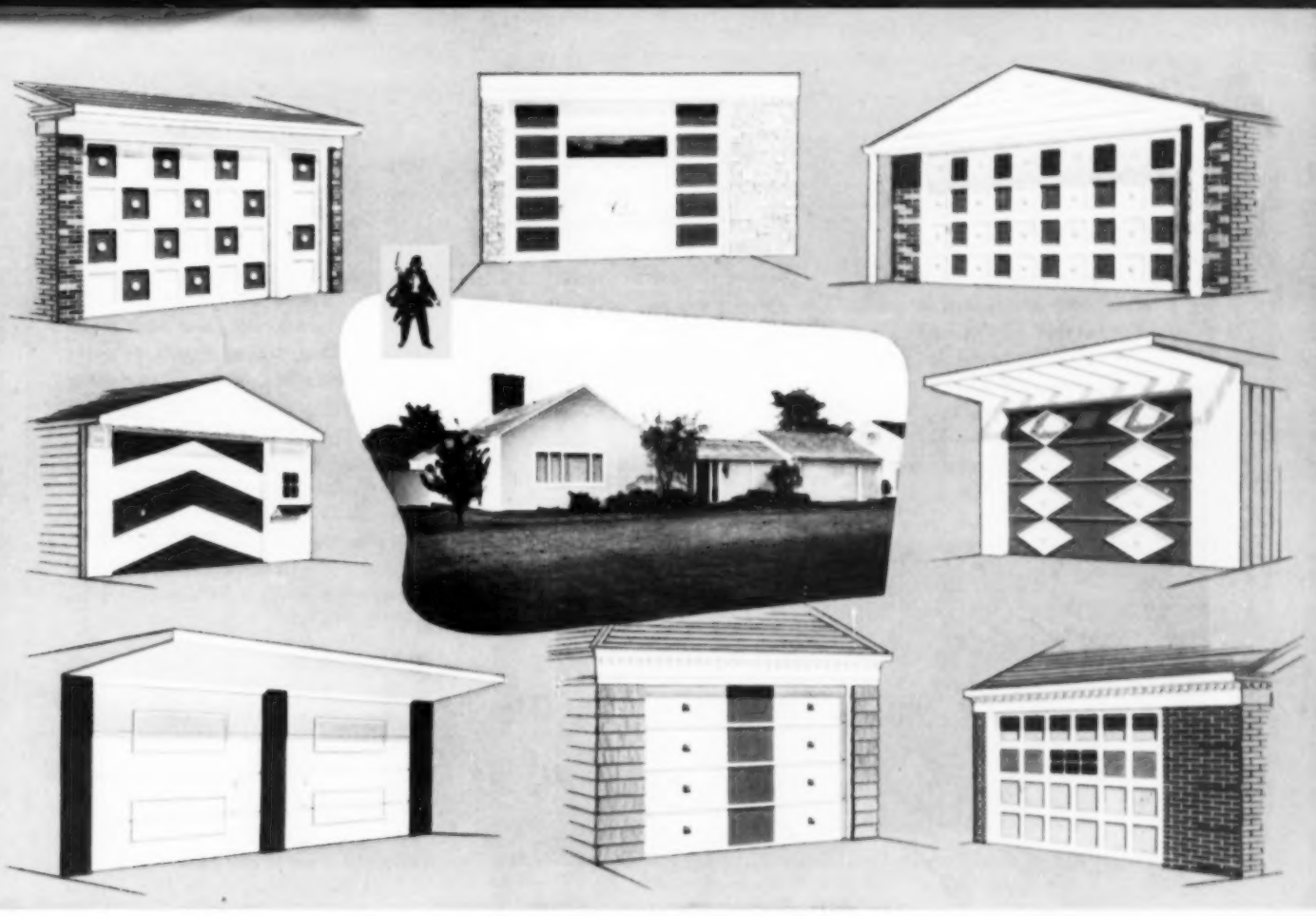
notices

program of research on standardization

A Fellowship for conducting systematic studies of standardization and its application in science, engineering, production and marketing has been announced by Dr. Edward R. Weidlein, president, Mellon Institute, Pittsburgh, Pa. This Fel-

(Continued on page 24)



The Door of Ideas for *Your* House of Ideas

You can thank the automobile for making the garage door the new "front door"—the one that everybody sees *first* when they drive into your driveway. And, you can thank Crawford for creating doors that enable you to bring distinctive design and rich and beautiful color to this large and often neglected area—the garage frontage. It's easy to get distinctive effects with Crawford Marvel-Lift Doors. In HOUSE & GARDEN'S House of Ideas (above, center) the radio-operated, double-width Crawford Marvel-Lift Door is finished in siding to match the house. The surrounding designs are produced by applying Crawford decorative rosettes, moldings and false louvers to *standard, stock* Crawford Marvel-Lift Doors. The result is "decorator doors" at much less than such doors have ever cost before. (And, of course, all these doors have the easy operation which has made them America's favorites for nearly a quarter century.) Our new full-color brochure "CRAWFORD CUSTOMIZED DESIGNS" will be sent free on request. If you enclose 15c, we'll include our new booklet, "HOW TO PLAN YOUR GARAGE," full of interesting, helpful ideas. For quick information on garage doors, call your local Crawford Door Sales Company listed in your classified phone book under "Doors."

Send 15c for this helpful booklet.

Crawford MARVEL-LIFT Doors

More than a million in daily use • Residential, Commercial, Industrial

Crawford Door Company, 114-401 St. Jean, Detroit 14, Michigan

Factories in 10 centers; warehouses in 80 centers; sold everywhere

Manufactured and sold in Canada by F. Eastman & Sons, Ltd., Ottawa, Ontario

1. Any Crawford Marvel-Lift Door can be equipped for push-button control from your moving car.

2. As you enter your driveway, touch the button on the dash; door goes up, lights go on, you drive in, safe, dry, warm.

3. Safely inside, another touch on a button, in your car or in the house, closes the door, turns out the lights. When you go out, the process is reversed.

A complete range of styles and sizes in single and double width.

notices

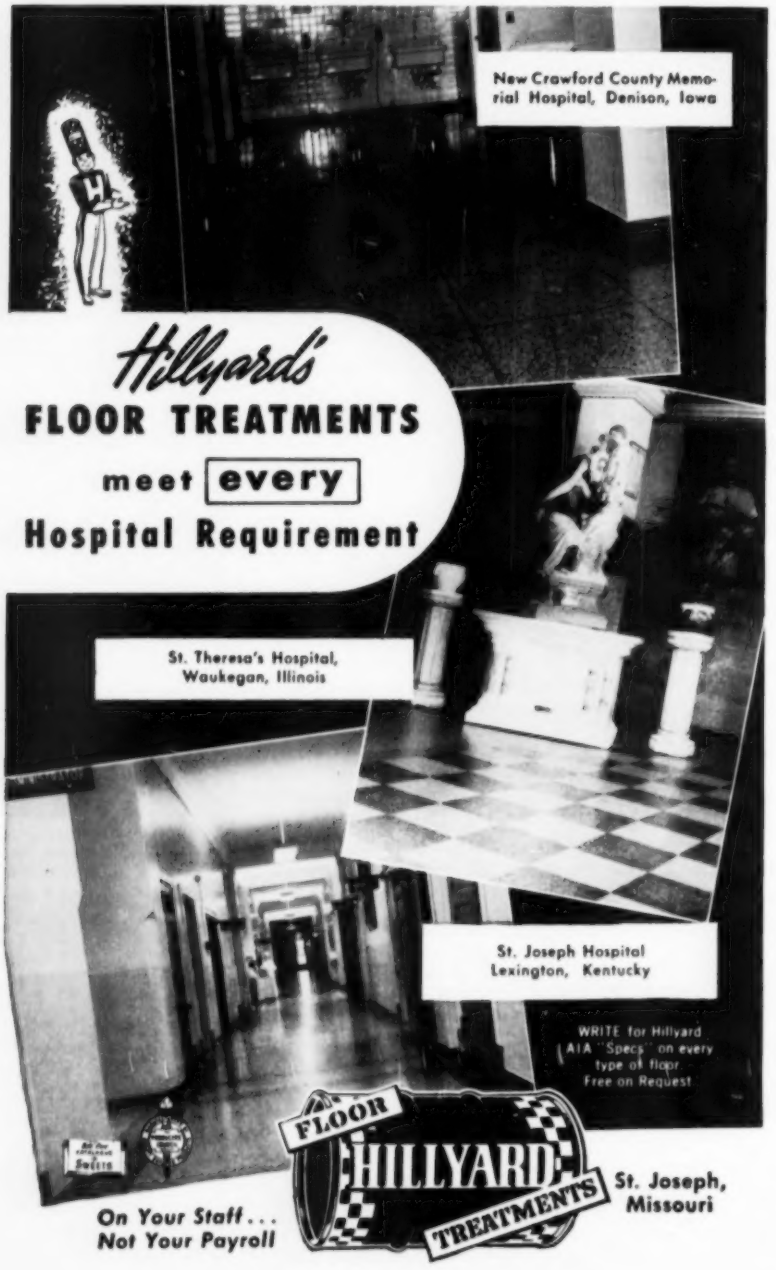
(Continued from page 22)

lowship will be sustained at the Institute by a grant from the SARAH MELLON SCAIFE FOUNDATION of Pittsburgh, and its projects will be organized and supervised by DR. DICKSON RECK, Advisory Fellow. Dr. Reck will work in co-operation with research specialists of the Institute and with national authorities and societies.

building construction course

BUSINESS PROBLEMS OF BUILDING CONSTRUCTION, a new course, will be offered for the first time during the spring semester by New York University's Division of General Education. MORRIS LIEBESKIND, Professional Engineer and Deputy Superintendent for the Bureau of Plant Operation and Maintenance, Board of Education, City of New York, will instruct the class which will meet on Mondays from 6:15-8:00 p.m., Feb. 2-May 25. Designed for architects, engineers, contractors, and others engaged in construction, management and operation of buildings, the course will cover such topics as advertising, taking of bids, relations among contractors, payments, interpretations and difficulties of specifications, and legal implications for contractors.

Information on architectural and building construction courses may be obtained from the Division of General Education, 1 Washington Sq., N., New York 3, N.Y. Registration will be held noon-8:00 p.m. and on Saturdays 9:30 a.m.-1:00 p.m., Jan. 19-Feb. 6

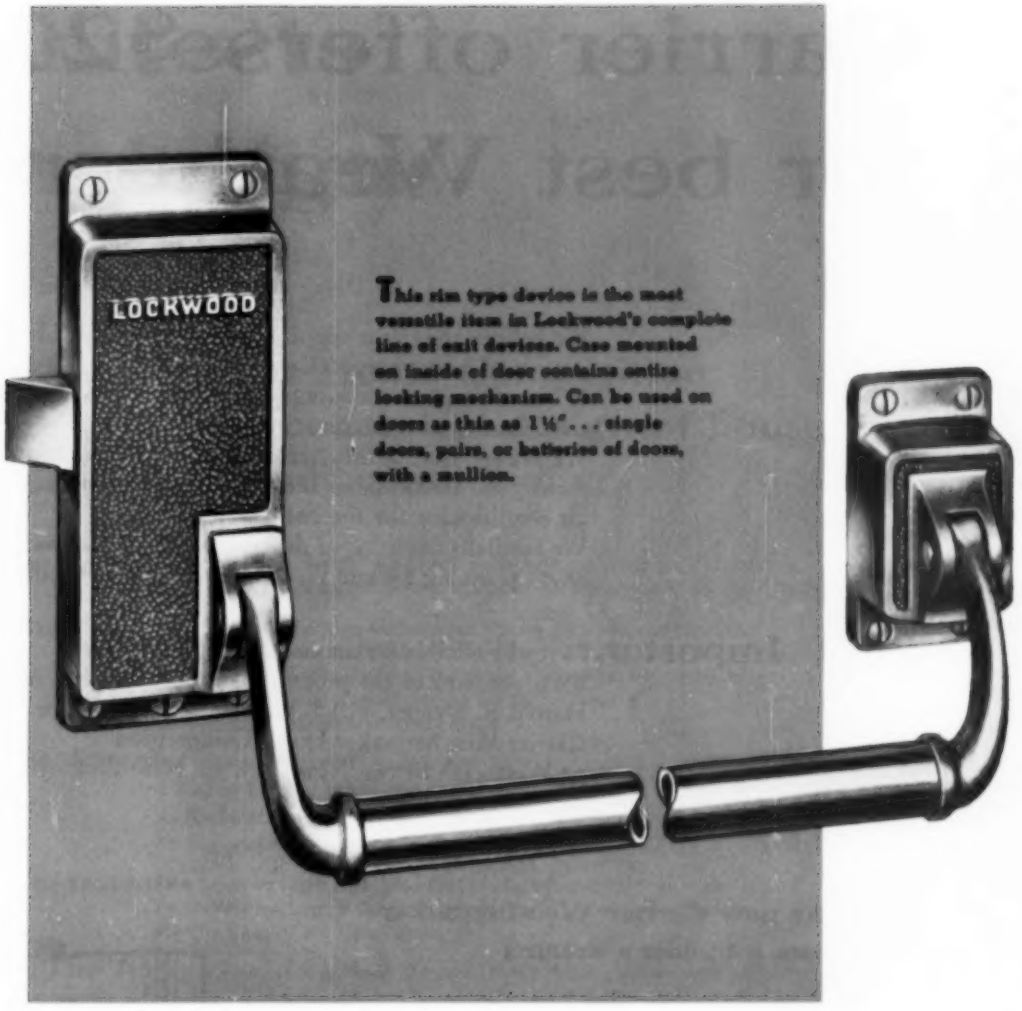


scholarships

THE LOWELL M. PALMER FELLOWSHIP IN ARCHITECTURE is offered to assist a student of unusual promise to undertake the advanced study of architecture at Princeton, including research in architectural composition in the Architectural Laboratory, and the opportunities offered by close affiliation of the School of Architecture, the Bureau of Urban Research, the Department of Art and Archaeology, and other graduate Departments of the University.

THE PALMER FELLOW will receive a stipend of $1200 during his year of residence at Princeton. He will be entitled to all the privileges of a Fellow of the University, including residence in the Graduate College buildings, if unmarried. In awarding the fellowship, particular consideration will be given to (1) achievement in architectural design; (2) personal qualifications; (3) scholastic record; (4) professional experience. All applicants must be citizens of the U.S., holders of a Bachelor's degree, less than 27 years of age on Oct. 1, 1953, and in good physical condition. In order to receive consideration for appointment for 1953-54, applications, together with supporting documents must be received not later than March 1, 1953.

The award will be announced April 1, 1953. Application blanks may be obtained by writing the Secretary, School of Architecture, Princeton University, Princeton, N.J.


LOCKWOOD
This rim type device is the most versatile item in Lockwood's complete line of exit devices. Case mounted on inside of door contains entire locking mechanism. Can be used on doors as thin as 1¾"... single doors, pairs, or batteries of doors, with a mullion.

Safe exit assured by LOCKWOOD

As a leader in the development and manufacture of builder's hardware for the nation's outstanding buildings, Lockwood has an unequalled reputation for quality and dependability.

Lockwood engineers have put all their experience into perfecting the smoothest-working Panic Exit Devices possible.

The result: A *complete line* including vertical, mortise and rim type locks. For full details, see Section 17e/LO in Sweet's 1953 Architectural File or consult your Lockwood contract dealer.

SEE OUR CATALOG IN SWEET'S FILE

Lockwood

LOCKWOOD HARDWARE MANUFACTURING COMPANY
Fitchburg, Mass.

Carrier offers $27,800 for best Weathermaker

We believe that year-round air conditioning can be the genesis of better homes. Carrier originated the Weathermaker Home concept to encourage the recognition of air conditioning as a factor in home design.
We are sponsoring this Architectural Competition to focus your attention on the potentialities of year-round air conditioning for the nation's houses.
We cordially invite your designs and hope you will enjoy planning for our Weathermaker Air Conditioners.

Important: to be eligible for an award your submission must conform to the program. Write for it now. Address:
Harold R. Sleeper, F.A.I.A., Professional Advisor
Carrier Weathermaker Home Competition
25 West 44th Street, New York 36, New York

The new Carrier Weathermaker beats a builder's dreams

Last year the building industry told Carrier (and every other air conditioning manufacturer) what kind of air conditioner they needed to tap the vast market for homes as low as $10,000.

Today, the new two-ton Carrier Home Weathermaker gives them what they asked for.

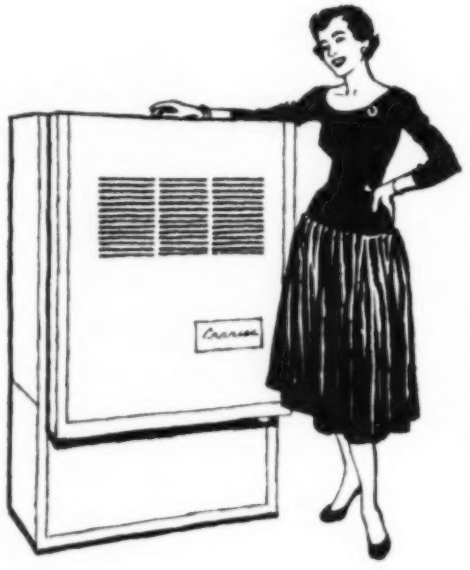
They asked for: a combination that would take no more than 12 sq. ft. of floor space.
The Weathermaker: heats and cools, snuggles into a 3 x 3 ft. space.

They asked for: a lower price tag.
The Weathermaker: costs less than any other combination of its capacity.

They asked for: low operating costs to meet FHA standards.
The Weathermaker: comes in water-cooled models, or air-cooled where water is a problem; burns gas or oil, whichever is least expensive.

They asked for: fewer extra costs.
The Weathermaker: comes complete, requires only ducts and final connections.

They asked for: accessibility.
The Weathermaker: is fully serviceable from the front.



If you want your small houses to be big news, get the full facts on the new Carrier Weathermaker. Write: Carrier Corporation, Syracuse, New York.

Carrier

to architects
Home designs

The Carrier Weathermaker Home Competition for the economical design of houses equipped with year-round air conditioning . . .

The Purpose: to provide designs which will encourage the planning and building of modern well-designed houses equipped with year-round air conditioning.

The Criteria: (1) good planning for house and site which takes advantage of year-round air conditioning; (2) skill in achieving economies in plan, design and equipment due to the use of year-round air conditioning; (3) suitability and adaptability for use in a home development; (4) esthetic considerations.

The Awards: National Grand Prize of $5000
6 Regional Grand Prizes of $2000 each
12 Regional First Prizes of $750 each
12 Regional Second Prizes of $150 each

The Contestants: must be registered, graduate or student architects or architectural draftsmen residing in the Continental United States, the Territory of Hawaii, Puerto Rico, or the Canal Zone.

The Jury: will be made of three Members of the A.I.A.; a housewife and a builder.

The Problem: Class 1—House of 1000 sq. ft. and under on 60 x 120 ft. lot
Class 2—House of 1000 sq. ft. to 1800 sq. ft. on 80 x 120 ft. lot
Awards will be made to both flat and pitched roof types in each class. Contestants must design their submissions for the region in which they live or work. For purposes of the Competition the United States will be divided into Three Regions: Northeast Region; Southern and California Region; Northwest and Central Region.

The Deadline: submissions must be received at the following address not later than 5 P.M., E.S.T., April 10, 1953.

Harold R. Sleeper, F.A.I.A., Professional Advisor
Carrier Weathermaker Home Competition
25 West 44th Street, New York 36, New York

The Entries: winning designs will be publicized and promoted nation-wide and Carrier Corporation will assist in the construction of the actual houses.

Contestants shall have the right to make contracts for their architectural services in connection with their winning designs, as it is the desire of the Sponsor that these houses be built.

The Sponsor reserves the right, on written notice to the contestant, to purchase and publicize other than the prize-winning designs. Contestants shall be paid $100 for each such design selected.

All other submissions will be returned to the contestants, insured for $100.

Air Conditioning · Refrigeration · Industrial Heating

New Texas Hospital Demonstrates Flexibility of Honeywell Customized Temperature Control

System will meet wide range of temperature control needs

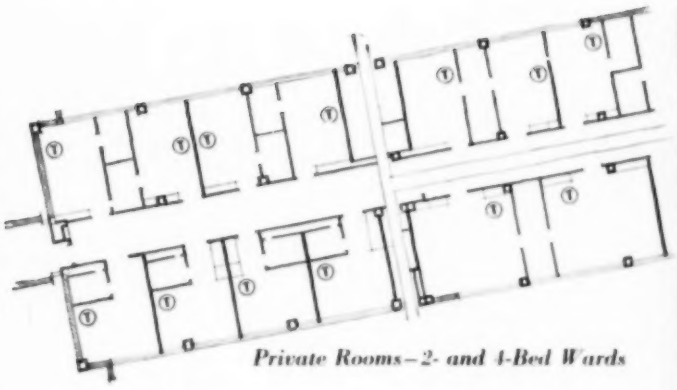
The University of Texas M. D. Anderson hospital for cancer research, now under construction in the Texas medical center at Houston, will be a truly outstanding addition to the country's medical facilities when it's completed sometime next year.

Carefully planned in every detail, this "cancer station" will contain such features as the first cobalt "bomb" in the United States for radiation treatment, color television for remote observation of operations and a betatron laboratory.

Another feature of this new building is that both heating and cooling will be controlled by Honeywell Customized Temperature Control.

The installation includes *comfort* control for patients—an individual thermostat in every patient's room. It includes operating room controls for both temperature and humidity. It includes a new electronic temperature control system to maintain photographic bath water within the exacting temperature range of plus or minus one-tenth of one degree Fahrenheit. And it includes electronic fume hood controls to remove dangerous fumes from radio isotope laboratories.

In the Anderson hospital, Honeywell Customized Temperature Control will indeed meet a wide range of temperature needs.



Private Rooms—2- and 4-Bed Wards

Notice on the floor plan that with Honeywell Customized Temperature Control each patient-room has its own individual thermostat. This means that *each* patient can be kept genuinely *comfortable* no matter what the weather outside. And it makes it possible for doctors to "prescribe" the exact temperature each patient needs to get well fast.

Plans for the Anderson hospital were developed by the following firms: MacKie & Kamrath, AIA, Architects, Houston; Schmidt, Garden & Erikson, Consulting Architects, Chicago; Lockwood & Andrews, Mechanical and Site Engineers, Houston; Walter P. Moore, Structural Engineer, Houston; Farnsworth & Chambers Co., General Contractors, Houston; Archer Plumbing Co., Mechanical Contractors, Houston.

For Comfortable, Even Temperature in New or Existing Buildings— of Any Size, Specify Honeywell Customized Temperature Control

Whether it's a hospital, apartment, office, store, factory, school, garage — or any size building — new or existing, Honeywell Customized Temperature Control can help meet your clients' heating, ventilating and air conditioning problems.

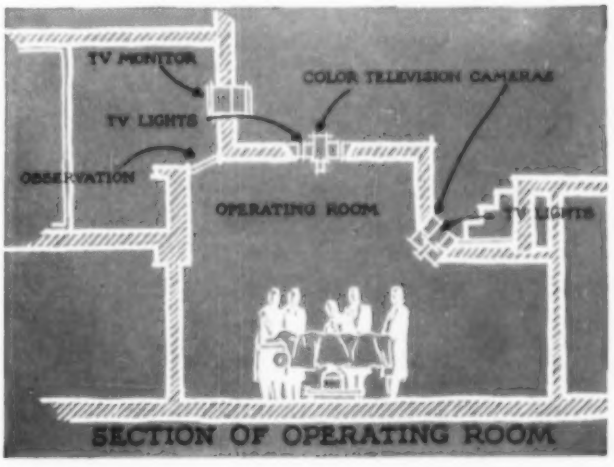
Once equipped with Honeywell Customized Temperature Control, they'll have an ideal indoor "climate" — and save fuel besides.

For full facts, call your local Honeywell office. There are 104 across the nation. Or mail the coupon today.

W. M. Andrews of Lockwood & Andrews, Consulting Engineers, says:

"It's an extremely flexible method of control. And that means Honeywell Customized Temperature Control can be used to meet nearly any temperature problem — in any type of building."

Honeywell Customized Temperature Control will control these air conditioning units suspended above doorways. Heating of rooms will also be thermostatically controlled. When installed *at time of construction*, system duct work can easily be concealed, can be put in at lowest cost.



Color television, as shown on the operating room cross section above, will permit over 300 students to watch surgery. Extra heat from television lights will be compensated for by sensitive Honeywell thermostats. Operating rooms will also be equipped with humidity controllers, an important feature in the Honeywell Customized Temperature Control installation.

MINNEAPOLIS
Honeywell

First in Controls

MINNEAPOLIS-HONEYWELL REGULATOR CO.
Dept. PA-2-202, Minneapolis 8, Minnesota

Gentlemen:
I'm interested in learning more about Honeywell Customized Temperature Control.

Name _____

Firm Name _____

Address _____

City _____ *Zone* _____ *State* _____

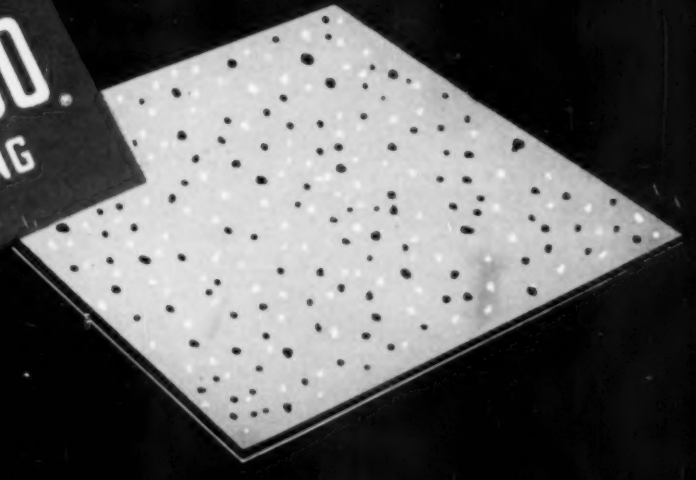
MATICO PRESENTS

Confetti

- 10 FESTIVE COLORS
- ECONOMICAL ASPHALT TILE
- IDEAL FOR EVERY ROOM
- TOUGH AND LONG WEARING
- FORTIFIED WITH POLYSTYRENE PLASTIC
- FOR USE ON, ABOVE OR BELOW GRADE

QUALITY CONTROLLED

MA·TI·CO
TILE FLOORING



REPLACEMENT OR REFUND OF MONEY
Guaranteed by Good Housekeeping
IF NOT AS ADVERTISED THEREIN

a great new style in asphalt tile!

MATICO *Confetti* SETS PACE IN SMARTER ASPHALT TILE STYLING!

It's gay, it's new, it's colorful! It's festive MATICO Confetti—the striking multi-color pattern that meets the demands of homeowners and decorators alike for smarter floor styling. Leading architects and builders in the West have already found this distinctive, low-cost floor covering extremely popular with their clients. And remember, Confetti, like all MATICO Asphalt Tile, is fortified with polystyrene plastic for bright, enduring colors . . . extra toughness and resiliency . . . long wear. It's adaptable to many different decorative schemes — in homes, offices, commercial buildings and institutions. Available in 9" x 9", ⅛" tiles.

MASTIC TILE CORPORATION OF AMERICA

Member: Asphalt Tile Institute

JOLIET, ILL. • LONG BEACH, CALIF. • NEWBURGH, N.Y.

Mail coupon today for full details and free samples

MASTIC TILE CORPORATION OF AMERICA
Dept. 9-2, P.O. Box 986, Newburgh, N. Y.

Please send me specification data and free Confetti sample kit.

Name .....

Address .....

City..... Zone.... State.....

3A87

Featured

in the new CHAMBER OF COMMERCE BUILDING
of the Corpus Christi Civic Center

Richard S. Colley, Architect

Once again Gate City Wood Awning Windows have been specified for an important new building! In addition to the usual factors of design harmony and effective climate control, this building required windows that could successfully withstand exposure to salt spray and hurricanes. Gate City Wood Awning Windows were chosen to do the job because of their proven performance over the years in all kinds of climates, conditions and weathers.

For Specifications refer to
SWEET'S FILE, 17c-GA

Member of the
PRODUCERS' COUNCIL, INC.

Gate City Perma-Treated
Wood AWNING WINDOWS

GATE CITY SASH & DOOR CO.
"Wood Window Craftsmen Since 1910"
P. O. Box 901, Fort Lauderdale, Florida

"TILE pleases everybody!"

reports Howard Jones, Manager, Organization, Planning & Controls, Standard Pressed Steel Company, Jenkintown, Penna.

"Management likes tile's near-to-zero maintenance costs and the improvement in employee morale that it brings.

"The employees themselves are quick to appreciate its cheerful colors and sunny, spic and span atmosphere.

"The maintenance staff saves time and effort, because tile is so easy to keep spotless."

Next time, include American-Olean Tile in your plans. Each tile is individually sized, and all are carefully blended for color—two good reasons why you should specify American-Olean Tile. Its beauty is permanent—it's real clay tile!

American-Olean Tile Co.

Executive Offices: 945 Kenilworth Ave., Lansdale, Penna.

TILE SPECIFICATIONS: Color Plate 305, Girls' Washroom, Standard Pressed Steel Co. Upper Wall—11 Ivory, Lower Wall—59 Parchment, Floor—Three-size Check, C. E., Golden Range Varitone, Sand Brown, Dark and Light Olive Textone.

SELF-SPACING. Small projections on each edge of American-Olean wall tiles automatically space them evenly. This assures even joints for best appearance; more uniform joints for better grouting. These straight even joints, plus the sparkling color and texture of tile, are what make an American-Olean installation so outstanding.

WRITE TODAY for your free copy of Booklet 300, Modern Industrial Washrooms. It's filled with helpful, colorful tile ideas. No obligation, of course. Use the coupon.

AMERICAN-OLEAN TILE COMPANY
945 Kenilworth Ave., Lansdale, Pa.

Gentlemen:
Please send me, without obligation,
——— copies of your new Booklet 300.

Name .....
Title .....
Firm Name .....
Address .....
City ..... *Zone* ... *State* .....

New!

Type NPLAB plug-in breaker panelboards

1. Smaller, more compact—lighter in weight.
2. Ample wiring gutters—nothing less than four inches.
3. New type wire terminal does away with wire looping on branch breakers.
4. Snap-on covers over neutral bar and main lugs provide quick access for wire connections.
5. Identification of breaker bussing is instant and permanent—during and after installation. Takes the guesswork out of load balancing.

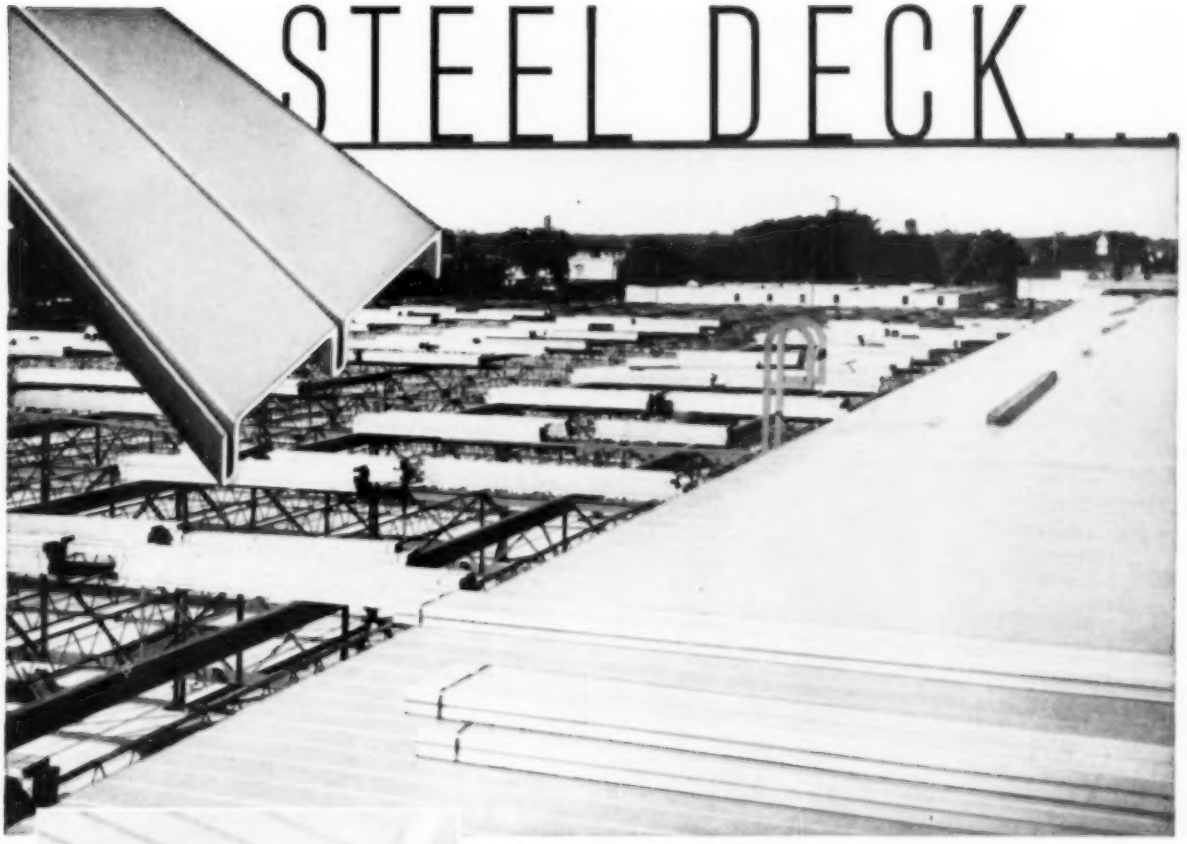
Quality in a panelboard—in design and construction—makes for better circuit protection. Look to Westinghouse.

Call your Westinghouse representative, or write for Panelboard Book B-5644, Westinghouse Electric Corporation, Box 868, Pittsburgh 30, Pennsylvania. J-93496

YOU CAN BE SURE... IF IT'S Westinghouse

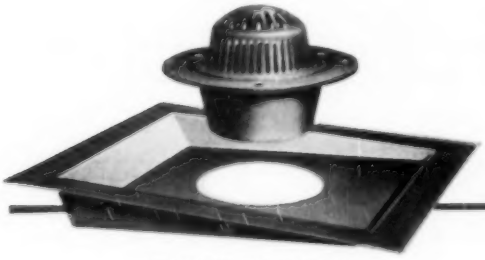
APPARATUS DISTRIBUTOR WESTINGHOUSE

STEEL DECK...



BUILT-UP SADDLES ELIMINATED

Built-up saddles are eliminated in Steel Deck Roofs. Purlins can be set to create valleys at sump locations in the drainage area. Steel Deck can be warped to conform. No additional deck plates are required—no cutting, fitting or bending necessary.



SUMP RECESSES and SUMPS

Mahon Roof Sump Recesses for use with Mahon Steel Deck can be furnished to fit any roof pitch. Mahon Cast Iron Sumps can also be furnished for 4", 5", and 6" conductors.

Roofs a Greater Percentage of New Construction Year after Year!

The increasing preference year after year for Steel Deck in roof construction is a natural development . . . because, Steel Deck offers certain definite advantages not common to other types of roof construction. It can be installed in any kind of weather—no waiting for materials to dry . . . it can be insulated to the exact degree to meet "U" Factor requirements in any given locality without regard to structural properties. And, most important, Steel Deck's light weight permits substantial savings in the supporting structure—total dead load, including insulation and waterproofing material, is less than any other type of permanent roof construction. Mahon Steel Deck is available in either Galvanized or Enamel Coated Steel. Stiffening ribs are vertical —no angular or horizontal surfaces where troublesome dust may accumulate. In the enameling process, the metal is cleaned, phosphated, and treated with a chromic acid solution to provide paint bond, and the protective coating of synthetic enamel is baked on at 350° F. prior to roll-forming. See Mahon's Insert in Sweet's Files for complete information, or write for Catalogs B-53-A and B.

THE R. C. MAHON COMPANY

Detroit 34, Michigan • Chicago 4, Illinois • Representatives in Principal Cities

Manufacturers of Steel Deck for Roofs, Partitions, Ceilings and Concrete Floor Forms; Insulated Metal Walls of Aluminum, Stainless or Galvanized Steel; Insulated Metal Wall Panels; Rolling Steel Doors, Grilles, and Underwriters' Labeled Rolling Steel Doors and Fire Shutters.

MAHON

We can learn from bankrupt Micawber

"MY advice, Copperfield, you know. Annual income twenty pounds, annual expenditure nineteen-nineteen-six, result happiness. Annual income twenty pounds, annual expenditure twenty-ought-six, result misery. The blossom is blighted, the leaf is withered—in short you are forever floored. As I am!"

This is probably the most famous financial counsel in all English literature, offered a hundred years ago by Charles Dickens' character the bankrupt Micawber to the hero David Copperfield. As advice it is just as good in 1953 as it was in 1849, and just as sound for a nation as for an individual.

In 17 of the last 20 years, Uncle Sam has followed Micawber's practice, not his advice. Our national balance sheet has been, figuratively, "annual income twenty pounds, annual expenditure twenty-ought-six". Ahead of us as a nation, if we continue this irresponsible policy, is Micawber's dire predicament, "blossom blighted, leaf withered—forever floored".

There is no sane reason why the world's richest nation should continue to live the financial life of a profligate bankrupt. It is time now to set our house in order. The program called for is simple: (1) Eliminate waste and extravagance in government spending; (2) Balance the Federal budget; (3) Control the national debt and reduce taxes.

By such positive action we can protect future happiness—and prevent misery—for ourselves, our children and our children's children.

QUALITY
YOUNGSTOWN
SERVICE

The Youngstown Sheet and Tube Company

General Offices--Youngstown 1, Ohio
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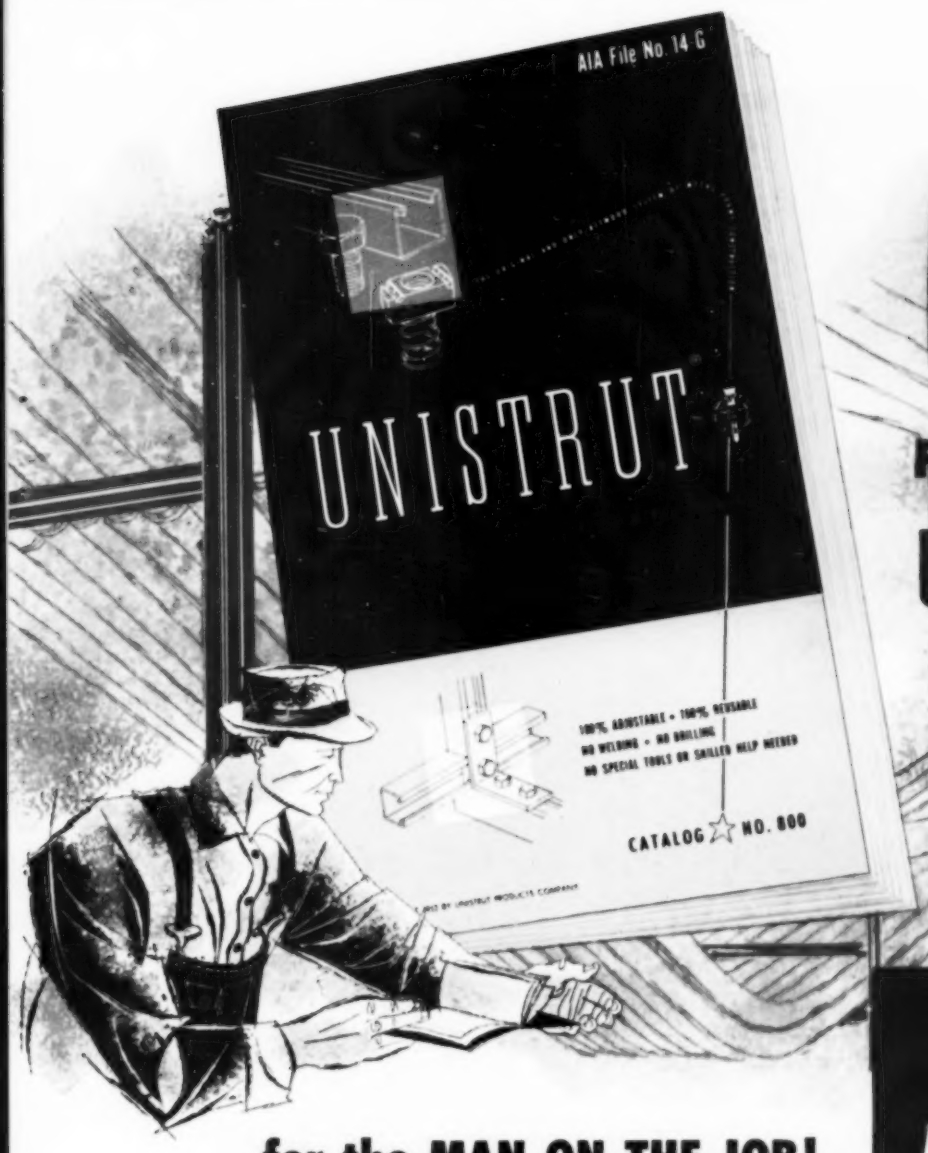
MANUFACTURERS OF CARBON ALLOY AND YOLOY STEELS

RAILROAD TRACK SPIKES - CONDUIT - HOT AND COLD FINISHED CARBON AND ALLOY BARS - PIPE AND TUBULAR PRODUCTS - WIRE - ELECTROLYTIC TIN PLATE - COKE TIN PLATE - RODS - SHEETS - PLATES.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UNISTRUT
100% ADJUSTABLE • 100% REUSABLE
NO WELDING • NO DRILLING
NO SPECIAL TOOLS OR SKILLED HELP NEEDED
CATALOG NO. 800

New

FREE 84 PAGE UNISTRUT® Pocket Catalog NO. 800

These are the Basic Components of the UNISTRUT Metal Framing System

for the MAN ON THE JOB!

84 pages crammed with ideas, pictures and data on how to frame, hang, support and mount all kinds of mechanical and electrical equipment with adjustable UNISTRUT All-purpose Metal Framing.

Perfect for the man on the job—most useful, too, as a handy reference catalog for the architect, engineer, draftsman, contractor, or builder. Just pocket size, easy to handle, always within reach when you want it. Order your free copy of the *NEW* UNISTRUT Catalog No. 800 today! With UNISTRUT channel and fittings you can build all types of conduit, cable, pipe and tubing hangers and supports, framing, mounts, racks, tables, benches, and many other structures with just a hacksaw and a wrench. No drilling, no welding, 100% adjustable and re-usable.

The UNISTRUT system of mechanical supports provides great strength without bulk. It's easy to work with, lasts indefinitely, and the finished structure assures neat and orderly appearance.

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U. S. Patent Numbers: 2327587 2329815 2345650 2363382 2380379 2405631 2541908
Other Patents Pending

The World's Most UNISTRUT **Flexible All-Purpose Metal Framing**

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Chicago 7, Illinois Dept. P2

Please send me a copy of the new UNISTRUT Pocket Catalog No. 800, without obligation.

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Company _____

Address _____

City _____ *Zone* _____ *State* _____

A plumb-bob view from the ceiling of the Grand Central Terminal, New York City, showing the marble floor which has resisted 400 million scraping feet a year for over 40 years. Terminal completed by Warren and Wetmore, Architects.

The World's Greatest Proving Ground for marble

There is probably no other building in the world which could have provided so exacting a test for any interior finishing material as this great terminal, where marble is used in such profusion. And no other finishing material for floors or wall surfaces could have as effectively met that challenge. Today, after being subjected for 40 years to an annual traffic flow thirty percent greater than the entire population of the United States, the marble is still beautiful — proof of the effectiveness of simple, systematic maintenance.

Write for your FREE brochure "Proof that Marble Costs Less" to

MARBLE INSTITUTE OF AMERICA, INC.

108 FORSTER AVENUE MOUNT VERNON NEW YORK

THE NEW BOOK SHOWS YOU HOW TO CONTROL YOUR SPACE

This new Mills Catalog shows you how to make your space layout permanently efficient by mobilizing it with Mills Movable Walls. *

MILLS MOVABLE WALLS GIVE YOU *Space Control*

YOUR office layout is truly efficient only if it can be readily adapted to changes in your space requirements. Such changes are inevitable—they occur frequently in every type of building.

Mills Movable Metal Walls enable you to *control* your space to fit your changing needs. They are permanent in function, distinctively modern and attractive in appearance, require practically no maintenance—yet they can be moved quickly, easily and at very low cost. Complete changes in layout generally can be accomplished in a matter of hours, overnight or during a week end, without interrupting normal business activity.

THE MILLS COMPANY, 944 Wayside Road, Cleveland 10, Ohio

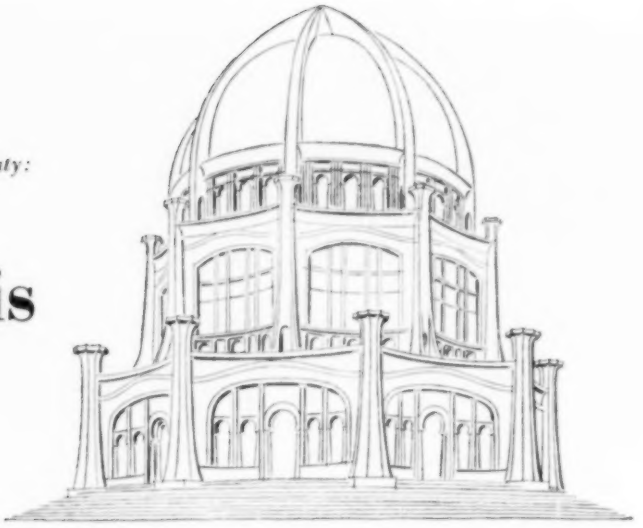
**MILLS Movable METAL WALLS*

*Write for your copy today.

You'll also find this 48-page Mills Catalog in Sweet's Architectural File.

where ANACONDA *Bronze contributes enduring beauty:*

Temple in Illinois



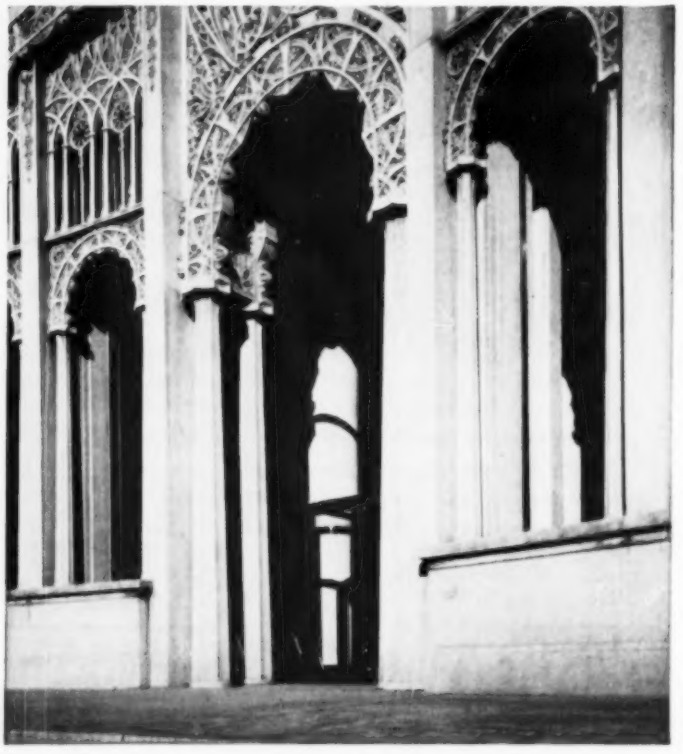
BAHÁ'Í HOUSE OF WORSHIP, Wilmette, Illinois. Louis J. Bourgeois, original architect for exterior. Shaw, Metz and Dolio, architect for interior. George A. Fuller Company, general contractor.

THIS IMPRESSIVE TEMPLE was started in 1920 by members of the Bahá'í faith to express Bahá'í teachings in progressive revelation and spiritual unity of East and West.

In the doors and windows of each of the nine sides of this Temple, the beauty of ANACONDA Architectural Bronze will outlast generations of worshippers. For no other metal surpasses bronze for monumental endurance, warmth or grace of effect. It is the oldest metal known to man — traditional in centuries of noteworthy architecture. Bronze creates the impression of stability and dignity so desirable in public, private and commercial buildings.

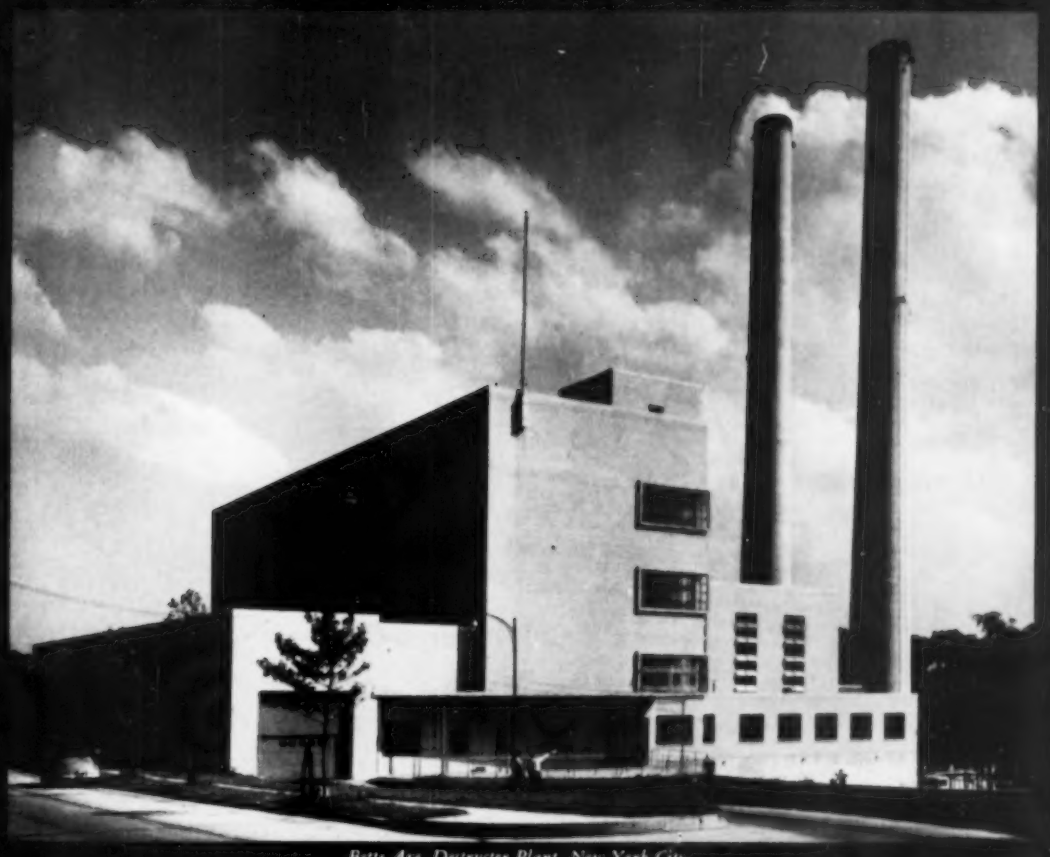
Bronze doors and window frames in the Bahá'í Temple were fabricated by Waukegan Architectural, Inc. from extrusions and sheets. For information about ANACONDA Architectural Bronze, write The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Limited, New Toronto, Ontario.

One of the nine entrances (right, exterior; below, interior). Original wood and steel frames were replaced with ANACONDA Bronze. First floor took ten tons.



The Name **HOPE'S** *Guarantees*

CUSTOM WINDOWS WITH *BILTIN* SUBFRAMES



Betts Ave. Destructor Plant, New York City
Architect: The City of New York Dept. of Public Works, Division of Engineering and Architecture.
Contractor: Grove, Shepherd, Wilson and Kruge, Inc.

Here's another excellent example of a Hope's Custom Steel Window and *Biltin* Frame installation in one of the buildings of the Department of Sanitation, New York City.

The windows and frames shown here were rust-proofed by the hot-dip galvanizing process and will require little maintenance during the life of the building. To obtain full ventilation with a maximum of convenience many of the window ventilators in this building were gear-operated.

Hope's engineers work with the architect in designing and making custom installations to meet specific conditions. Whatever problems you may encounter in window design and function . . . Hope's engineers will fully cooperate in solving them. Just write!

HOPE'S WINDOWS, INC., *Jamestown, N.Y.*

THE FINEST BUILDINGS THROUGHOUT THE WORLD ARE FITTED WITH HOPE'S WINDOWS

Country Club, Raleigh, N. C.
Floored throughout with
Northern Hard Maple.

Architect:
Wm. Henry Deitrick, Inc.
Raleigh, N. C.

If it deserves fine architecture, it deserves

"The Finest Floor that Grows"—

NORTHERN HARD MAPLE

- √ resilient
- √ bright
- √ smooth
- √ tight
- √ warm
- √ dry
- √ non-splintering
- √ easy cleaning
- √ easy re-surfacing
- √ dent-resistant

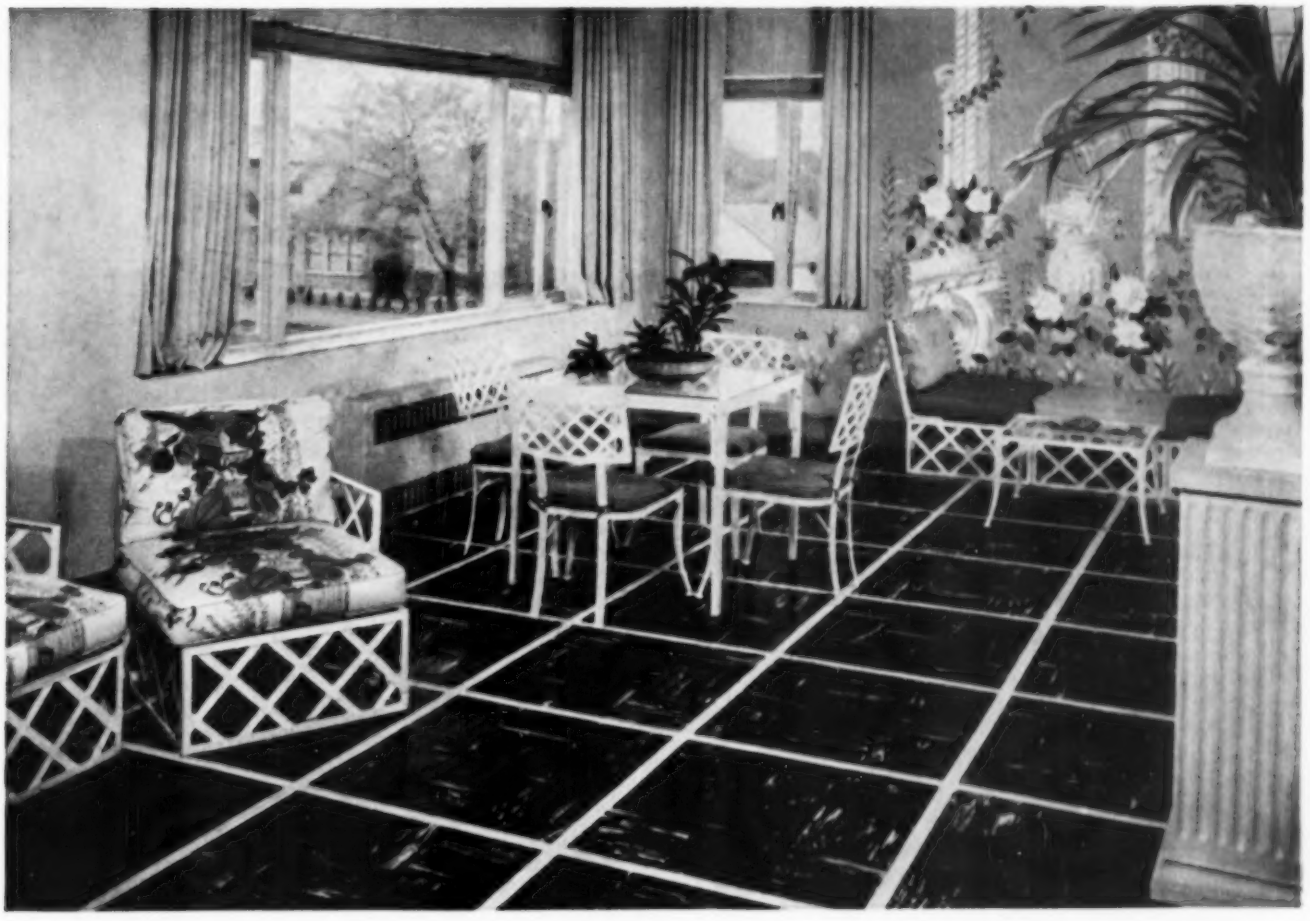
Today's architecture truly and admirably "brings the outdoors in." And inevitably, too, foot traffic carries in some of that same "outdoors," to make life a bit tougher for any floor. The choice of enduring MFMA-graded Northern Hard Maple, in strip, block or pattern flooring, assures a floor that will grow old very slowly and gracefully. "There's always a new floor underneath" which will forever respond to simple refinishing, after millions of footsteps may have dimmed its original genial luster. Nature does not produce a finer floor material, nor has man's ingenuity ever outdone Nature in this respect.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
Suite 583, Pure Oil Building, 35 E. Wacker Drive
CHICAGO 1, ILLINOIS

See Sweet's...
Arch. (12k-MA) for specifications data.

FLOOR WITH *NORTHERN* HARD MAPLE
BEECH AND BIRCH

SUPERB *Vina-Lux* FLOORS



Stay Clean • Stay Beautiful • Stay New for Years!

Beautiful, colorful Vina-Lux puts *any* home on a luxury footing . . brings it new smart beauty, and new easy-keeping, long-wearing qualities.

So smoothly-surfaced it simply refuses to absorb dirt or stains. Vina-Lux requires little maintenance. No waxing is necessary to keep it looking smart and attractive. Dense, close-textured Vina-Lux has unusual resistance to many kinds of oils, greases, acids and alkalis. Its reinforced vinyl-asbestos structure shrugs off ordinary foot-traffic.

And, Vina-Lux brings you brilliant color . . a wide choice of 13 lighter, brighter colors, both marbleized and solid . . colors that are tuned to today's decorative requirements.

With an almost rubber-like flexibility, Vina-Lux has remarkable strength and springiness. It goes down perfectly over any kind of firm sub-floor. For homes, for institutions, for commercial shops . . Vina-Lux is *more* than luxurious . . because Vina-Lux will do more things . . better . . than any other flooring!

Write for your set of Vina-Lux samples and name of nearest AZROCK dealer. Detailed information and specifications sent on request.

UVALDE ROCK ASPHALT CO.

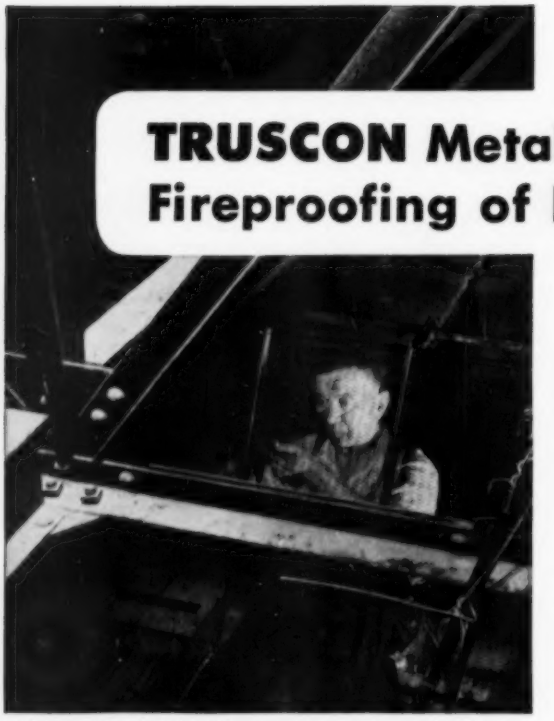
FROST BANK BUILDING • SAN ANTONIO, TEXAS

Makers of AZROCK VINA-LUX AZPHLEX DURACO

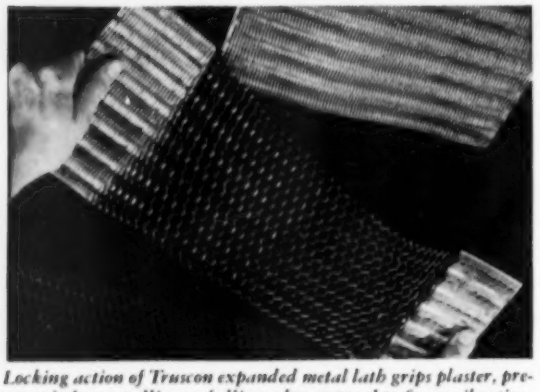
"Azrock Makes Fine Floors"

AZROCK FLOORING PRODUCTS

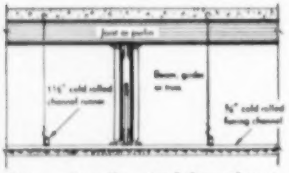
TRUSCON Metal Lath Allows Economical Fireproofing of Beams, Girders, Trusses!



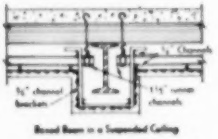
Truscon Metal Lath ceilings go up fast . . . attach to beams and girders . . . get support from simple furring strips.



Locking action of Truscon expanded metal lath grips plaster, prevents it from spalling or falling when exposed to fire or vibration.



How to install suspended membrane fireproofing . . .



How to box in a beam in a suspended ceiling

Fire resistance rating of beam, girder or truss	Metal lath membrane fireproofing
4 hours	1" gypsum-vermiculite or perlite plaster 100:2, 100:3
4 hours	5/8" gypsum-vermiculite base plaster 100:2, 100:3 plus 1/2" vermiculite acoustical plaster
3 hours	3/4" gypsum vermiculite plaster 100:2, 100:3
3 hours	1" neat wood-fibered gypsum plaster
2 hours	1" gypsum sanded plaster 1:2, 1:3

Full 4-hour fire resistance rating achieved by metal lath and plaster ceiling insulating membrane

● We call it "metal lath membrane fireproofing". This type of construction puts an insulating membrane between structural members and any fire below them.

Using Truscon Metal Lath, you erect a thin lightweight fire-resistive ceiling stretching wall-to-wall beneath structural members. There's no need for heavy costly individual encasement of beams and girders for fireproofing. And, you take advantage of the weight savings of lighter floors. With this metal lath and plaster insulating membrane, thin concrete decks over cellular steel panels, junior beams, and "O-T" steel joists qualify for use in fireproof buildings.

The fireproof ceiling protects metal decks, steel joists and purlins, as well as beams, girders and trusses.

Indeed, the highest fire ratings required by building codes are easily and economically achieved with Truscon Metal Lath membrane fireproofing.

Using this tested method, architects and engineers can design the degree of fire resistance required. And, by employing this lighter fireproofing, lighter floors and consequent lighter structural members, designers can total an impressive overall weight saving.

In addition, Truscon Metal Lath and plaster fireproofing doubles as a durable, attractive, and highly popular interior finish.

Write Truscon for more information about metal lath membrane fireproofing and the complete line of Truscon Metal Lath products which make it practical.

"Metal lath for strength – plaster for beauty."

TRUSCON MARK OF MERIT PRODUCTS

TRUSCON® STEEL DIVISION
REPUBLIC STEEL CORPORATION
1060 ALBERT STREET • YOUNGSTOWN 1, OHIO

BRIXMENT MORTAR

has better water-retention

Here's the way to test for high water-retention. Slap a small dab of any two mortars onto a brick. Wait a minute, then feel each dab. The one that stays plastic longest will be the one having the highest water-retention. Try this with Brixment mortar!

—AND HIGH WATER-RETENTION IS ESSENTIAL TO WELL-BONDED, WATERTIGHT MASONRY

Water-retaining capacity is the ability of a mortar to retain its moisture, and hence its plasticity, when spread out on porous brick. ● High water-retaining capacity is of *extreme importance* in mortar. If the mortar does not have high water-retaining capacity, it is too quickly sucked dry by the brick; the mortar stiffens too soon, the brick cannot be properly bedded, and a good bond cannot be obtained.

Brixment mortar has extremely high water-retaining capacity. It strongly resists the sucking action of the brick. Brixment mortar therefore stays smooth and plastic longer, when spread out on the wall. *This permits a more thorough bedding of the brick, and a more complete contact between the brick and the mortar.* The result is a better bond, and hence a stronger and more *water-tight wall.*

Louisville Cement Company, *Incorporated*, Louisville 2, Kentucky.

Now . . . you can give home buyers

bryant's new "Command-Aire" Twins

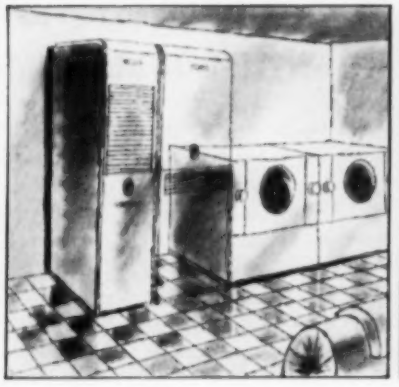
practical, attainable

Year 'round comfort . . . or the early "prospect" of it . . . is going to sell a lot of new homes this coming season. It's a feature home buyers want, and for two reasons: First, for the added enjoyment it provides; second, for the extra value it adds to the home should the owner have to sell in the next few years.

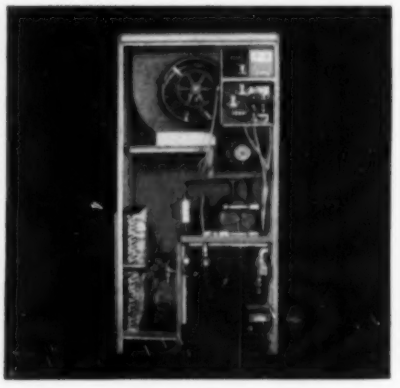
Now, with the introduction of Bryant's "Command-Aire" Twins, builders can offer this sales-clinching feature in *all* of their homes. Thanks to Bryant's mass-production techniques, they can offer summer cooling for 30% to 50% less than heretofore . . . or, let the purchaser add cooling later. Either way the buyer gets a big "plus" and think what this can mean in the profitable selling of homes.

bryant® *means business...*

Unusually compact design permits hide-away installations of the "Command-Aire" Twins—in closets or alcoves . . . in utility rooms . . . in basements. Requires a minimum of 7⅔ sq. ft. of floor space (actually less than twin sanitary tubs).



Use one cooling unit . . . sell 100! By installing the "Command-Aire" Twins in their model homes and leaving space for the cooling unit in the others, builders can offer "year 'round conditioning" in *all* their houses without additional investment.

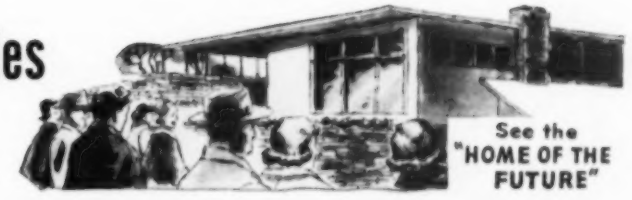


Air conditioner is independent unit with its own blower, air filter and controls. This eliminates need for air to pass through both units, improving both heating and cooling efficiency—and making for hushed operation. A Bryant "exclusive" in low-cost equipment.

"the home of the future" today!

make year 'round conditioning

by average-income families



Bryant's "Command-Aire" Twins, as you might guess, are *matched* heating and cooling units. Each operates separately, or they may be used together. And you can use *gas* or *oil* for heating, as both types of forced air furnaces are available. You also have a wide range of furnace sizes to choose from . . . as well as 2, 3 and 5-ton capacities in the summer conditioning units.

You will want to get all the facts on this new Bryant equipment as it can add to *your* profits in 1953. You'll be interested also in Bryant's supporting program to help builders sell their houses. Ask your Bryant Distributor to give you the details . . . or write Bryant Heater Division, 17825 St. Clair Avenue, Cleveland, Ohio.

Sales magic! Year 'round comfort conditioning at prices even "GI home buyers" can afford, can be real sales magic for builders in '53. They will get bigger crowds, more interested prospects, easier-to-sell customers . . . and make more money on their houses.

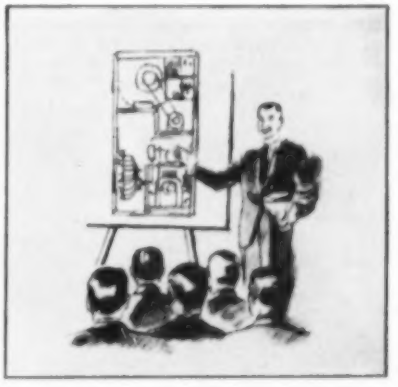
National advertising will pre-sell Bryant "Command-Aire" year 'round conditioning to millions this spring and summer, also carry the names of leading builders who are featuring "Command-Aire" installations in their homes this year.

Local promotion and publicity can tie the builder into the big national advertising program. We'll help prepare the material and get it into local papers. The "Command-Aire" Twins are "news"—news *builders* can use to advantage.

better business for builders

Five-year warranty on the hermetically sealed compressors of the 2 and 3-ton "Command-Aire" Cooling Units has tremendous appeal to home buyers. They will also appreciate the fact that factory-trained experts are close at hand.

"On-the-site" selling helps, especially developed for use by builders, will point up the extra comfort—extra value—of year 'round conditioning, also the many advantages of a "Command-Aire" installation to home buyers, both today and tomorrow.



Sales Training is another important feature of Bryant's new "Command-Aire" program. Qualified representatives are available to aid builders' salesmen in selling summer cooling most effectively. This can add substantially to builders' profits.

Insulated panels of U·S·S 17 (Type 430) mean fast, low-cost

WORKING UNDER ADVERSE WEATHER CONDITIONS, a crew of four installed 4005 square feet of insulated Stainless Steel panels on this building in less than eight working days. The panels were manufactured by H. H. Robertson Co., Pittsburgh, Pa.; installed by R. A. Steelman Co., Trenton, N. J.; architects were Walter Kidde Constructors, Inc., New York.

PANELS WERE INSTALLED by spot welding to the structural steel framework. Their light weight makes handling by a minimum crew possible.

CROSS SECTION of a complete panel for the fire station at United States Steel's Fairless Works shows the formed Stainless Steel exterior sheet, 1½" of insulation and the coated steel interior.

Stainless Steel construction at Fairless Works

4005 sq. ft. of panels installed by crew of 4 in 8 working days

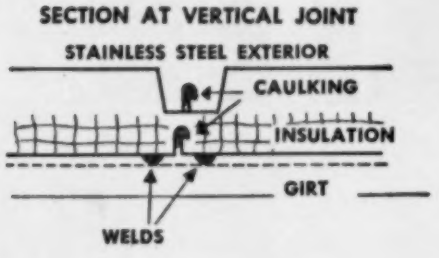
CONSTRUCTION with insulated building panels of U·S·S 17 (Type 430) Stainless Steel is gaining considerable momentum in the field of industrial building—such as power plants, factory office buildings, warehouses, etc. Architects and owners alike have been quick to recognize the advantages of light panel weight, long building life, minimum maintenance, low labor costs and fast erection in any type of weather.

The building shown here is a Stainless-panelled fire station at the new Fairless Works of United States Steel Corporation at Morrisville, Pa. The 66′ x 100′ structure contains 4005 square feet of insulated panels of 20 gage U·S·S 17 Stainless Steel.

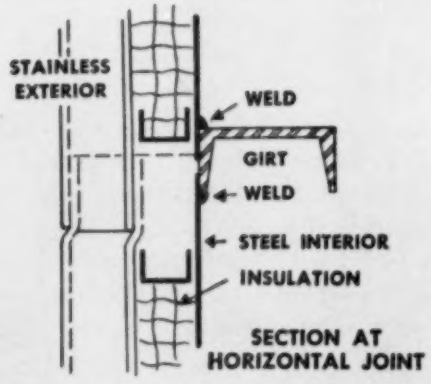
A crew of four men erected the panels under adverse weather conditions in less than eight working days. The panels, consisting of U·S·S 17 (Type 430) Stainless Steel exterior, 1½″ of insulation and a coated steel sheet interior, were attached to the structural steel framework by spot welding, a fast and strong method of installation. U·S·S 17 (Type 430) is readily available without CMP tickets.

Note the cross-sectional sketches of the horizontal and vertical joints. As indicated in the sketches, caulking is applied to the vertical joints prior to erection. This provides an excellent vapor seal and is therefore instrumental in reducing the over-all "U" factor. The cross section of the vertical joint illustrates how the lower panel is counter sunk to gain a tight flush joint at the lap.

A new book containing the latest information on construction with panels of U·S·S 17 Stainless Steel is now being distributed. For your copy, use the coupon below.



THESE DETAILS of panel cross sections show methods of making horizontal joint (below) and vertical joint (above). Such methods of joining, combined with the low" U" factor designed into these panels, produce an exceptionally well insulated building.



United States Steel Corporation
525 William Penn Place, Room 2808-E
Pittsburgh 30, Pa.

☐ Please send me your new booklet on U·S·S 17 Stainless Steel for industrial buildings.

☐ Please arrange to have fabricators of Stainless Steel wall panels send me literature on their particular type of construction.

Name ..... Title .....

Address .....

City ..... State .....

United States Steel produces only the Stainless Steel sheet and strip from which panels of this type are made; the panels themselves are fabricated by a number of our customers.

UNITED STATES STEEL CORPORATION, PITTSBURGH • AMERICAN STEEL & WIRE DIVISION, CLEVELAND • COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
NATIONAL TUBE DIVISION, PITTSBURGH • TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. • UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

8-78

USS

UNITED STATES STEEL

Why you should remember Gold Bond

"GYPSOLITE"®

BECAUSE it gives you...the builder...the plasterer...these advantages:

1. 50% lighter on the wall. 50% lighter to work with.

2. Finest quality perlite, carefully expanded and mixed in exact proportion with gypsum plaster.

3. High uniform strength. Regular "Gypsolite" is stronger than 3:1 sanded plaster.

4. Controlled, uniform suction. Moderate suction to receive finish coat.

5. Stabilized for uniform set.

6. Easier, cleaner mixing. Add water.

7. Basecoat dries at comparable rate to sanded plaster.

8. Economical. Material cost comparable to most job mixtures of gypsum plaster with lightweight aggregates.

9. Provides 3½ times insulation value of sanded plaster. K factor 1.4 (approx.) compared to sanded plaster 4.9 (approx.)

10. Extra fire resistance. *Partitions*—1 hr. fire rating. Gold Bond ⅜" perforated gypsum lath nailed to wood studs, 16" o.c., plastered to ½" grounds with Gypsolite. *Ceilings*—1 hr. fire rating. Gold Bond ⅜" perforated gypsum lath nailed to wood joists, 16" o.c., plastered to ½" grounds with Gypsolite.

NATIONAL GYPSUM COMPANY
BUFFALO 2, NEW YORK

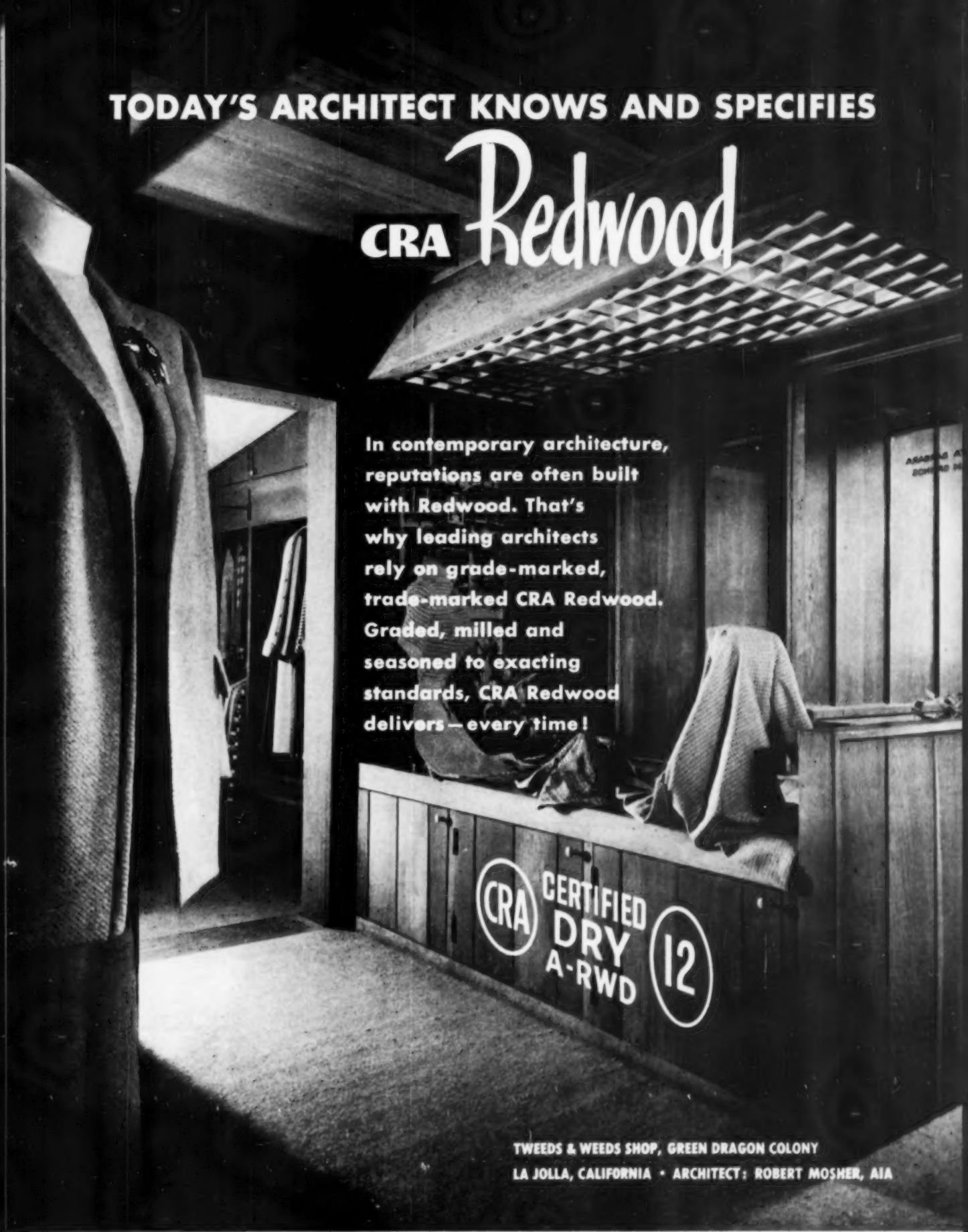
Lath, Plaster, Lime, Sheathing, Gypsum Roof Decks, Wall Paint, Textures, Rock Wool Insulation, Metal Lath, Sound Control Products, Fireproof Wallboards and Decorative Insulation Boards.

® Trademark Reg. U. S. Pat. Off.

You'll build or remodel better with **Gold Bond**

TODAY'S ARCHITECT KNOWS AND SPECIFIES

CRA Redwood



In contemporary architecture, reputations are often built with Redwood. That's why leading architects rely on grade-marked, trade-marked CRA Redwood. Graded, milled and seasoned to exacting standards, CRA Redwood delivers—every time!

TWEEDS & WEEDS SHOP, GREEN DRAGON COLONY
LA JOLLA, CALIFORNIA • ARCHITECT: ROBERT MOSHER, AIA

CALIFORNIA **REDWOOD** ASSOCIATION
576 SACRAMENTO STREET, SAN FRANCISCO 11

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Members: Coastal Plywood & Timber Co. • Hammond Lumber Co. • Holmes Eureka Lumber Co. • Arcata Redwood Co. Northern Redwood Lumber Co. • The Pacific Lumber Co. • Rockport Redwood Co. • Simpson Logging Co. Union Lumber Co. • Warm Springs Redwood Co. • Willits Redwood Products Co. • Eureka Redwood Lumber Co.

You can put full confidence in them!

THESE McQuay REPRESENTATIVES

No. 1 in a series of 3 advertisements

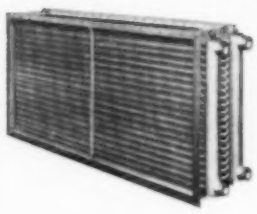
MAKE THE SEASONS COME TO YOU

McQuay INC.

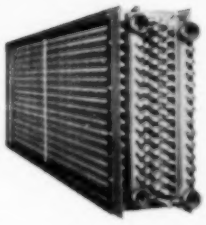
HEATING
REFRIGERATION
AIR CONDITIONING

1638 Broadway St. N. E., Minneapolis 13, Minnesota

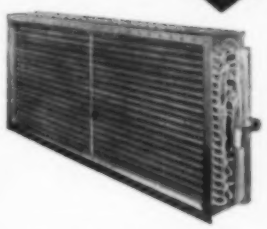
THIS COMPLETE LINE OF FAMOUS McQuay PRODUCTS



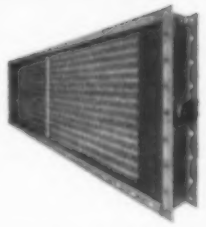
WATER COIL



CLEANABLE TUBE WATER COIL



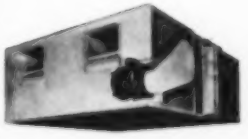
DIRECT EXPANSION COIL



"BLAST" HEATING STEAM COIL

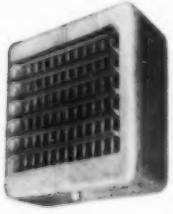
SEASONMAKER (FLOOR)

"RH" AIR CONDITIONER



AIR CONDITIONER
(Suspended Model)

AIR CONDITIONER
(Floor Model)



HORIZONTAL UNIT HEATER

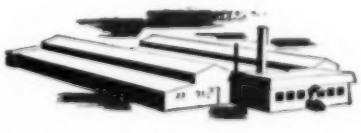
DOWN FLOW UNIT HEATER

BLOWER TYPE UNIT HEATER
(Suspended Model)

BLOWER TYPE UNIT HEATER
(Floor Model)

McQuay representatives, in all principal cities throughout the United States, are qualified by long experience and training to help you satisfy all of your air conditioning and heating requirements. For cooperation in making the sale, technical advice, or getting the job done on time, consult the McQuay representative in your territory. Available to you through him is the complete line of McQuay products, featuring famous Ripple-Fin construction—a McQuay exclusive, assuring maximum heat transfer efficiency and dependable performance.

PLANT 1—1600 Broadway N. E.
MINNEAPOLIS 13, MINN.

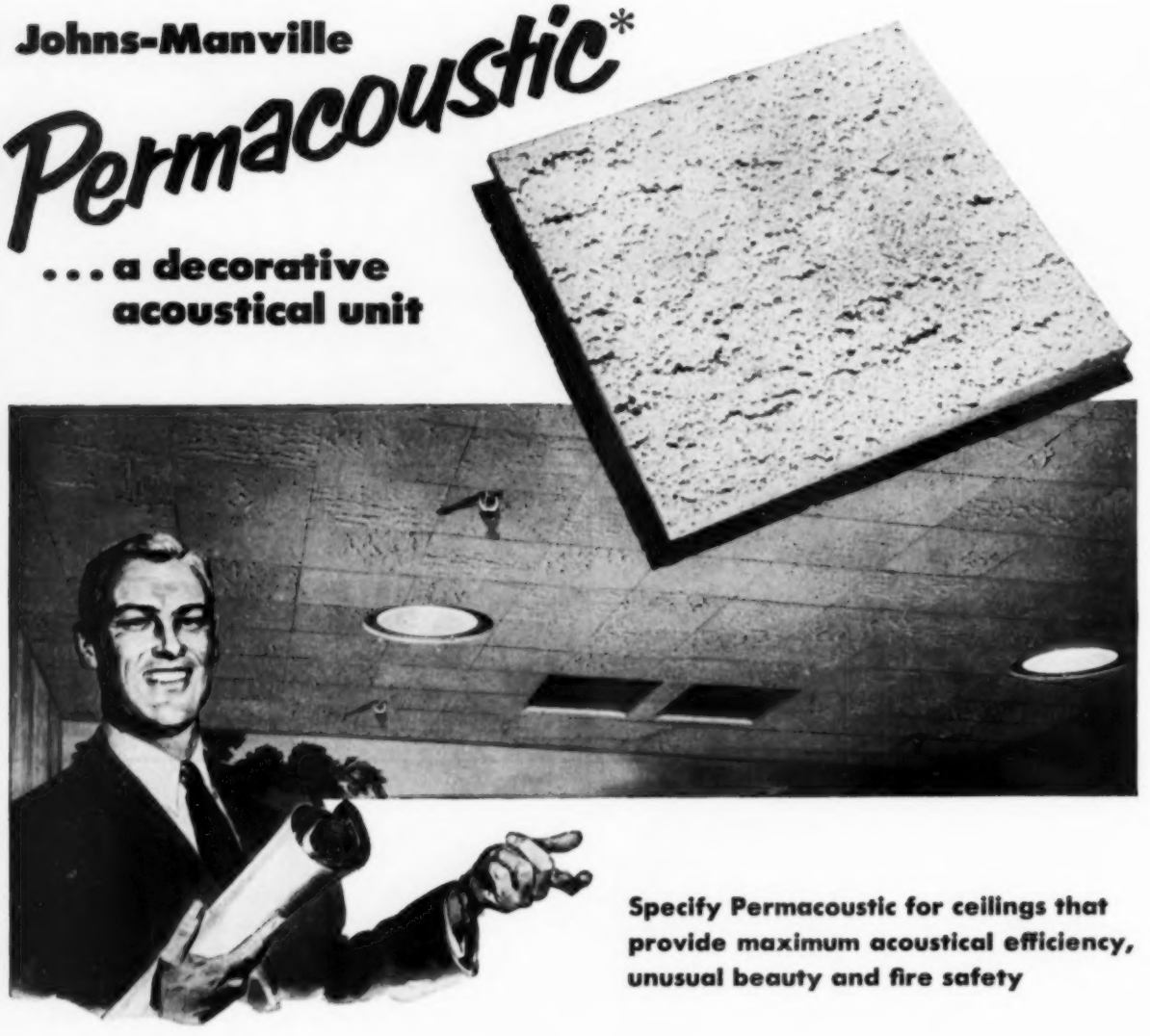


PLANT 2—1729 Broadway N. E.
MINNEAPOLIS 13, MINN.

PLANT 3—4th and Park Ave.
FARIBAULT, MINN.

Johns-Manville Permacoustic*

. . . a decorative acoustical unit



Specify Permacoustic for ceilings that provide maximum acoustical efficiency, unusual beauty and fire safety

Johns-Manville Permacoustic is exceptionally sound-absorbent, attractive and noncombustible. Its random-fissure surface increases its noise-reduction qualities and provides texture and decorative interest.

Made of baked rock wool fibres, molded into 12" square panels ¾" thick, J-M Permacoustic is fireproof . . . *meets all building code fire-safety requirements.*

Permacoustic is easy to install on existing ceilings or slabs, or by suspension using a spline system of erection.

Send for your free copy of the new brochure about Permacoustic. Write Johns-Manville, Box 158, New York 16, New York. In Canada, write 199 Bay Street, Toronto 1, Ontario.

*Reg. U.S. Pat. Off.

DESCRIPTION AND DATA CHART, ¾" thickness—12" x 12"—color, white

mounting	acoustical efficiency 125	250	500	1000	2000	4000	noise reduction coefficient	weight per sq. ft.	test no.
No. 1—cemented to plaster board	.04	.21	.75	.88	.85	.77	.65	1.3	A51-98
No. 7—furred by 1"x2" wood strips 12" o.c.	.56	.53	.60	.73	.88	.88	.70	1.3	A51-99

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J-M Acoustical Materials include Sanacoustic* Units, Transite* Acoustical Panels, and drilled Fibretone*

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- Greater Fire Protection

Daniel, Mann, Johnson & Mendenhall, Architect, Los Angeles, Calif.

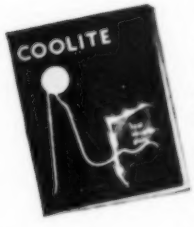
Skylights of new Culver City High School provide daylight illumination in large building.

COOLITE GLASS HELPS GUARD YOUNG EYES

Eye fatigue is an enemy of education. School children must be provided with high levels of quality illumination. In the modern Culver City High School, approximately 30,000 square feet of Hammered Coolite Wire Glass by Mississippi was installed in skylights which flood the entire interior with glare-free, controlled daylight for easier seeing. The texture and delicate blue-green tint of Coolite transmute raw sunlight into softly diffused and conditioned illumination. The innate strength of this famous wire glass by Mississippi adds structural endurance, reduces danger from breakage. Hammered Coolite Wire Glass helps retard effects of dangerous fires, provides increased safety for occupants. It tends to "bottle up" and smother small conflagrations before they can spread to tragic proportions.*

Study the use of Coolite for school buildings. Its superior qualities suggest its use in modern school architecture. Mississippi Glass Company conducts continuous experiments in daylighting research in its model schoolhouse. Specify Mississippi Glass and make daylight a part of your plan.

*Approved Fire Retardant No. 32



Translucent figured and wired glass by Mississippi for better daylight illumination is available in a wide variety of patterns and surface finishes all scientifically designed to distribute light to best advantage. Send today for free literature and samples.

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LIGHT WEIGHT

With its weight of *only* 6 pounds per square foot, a Kaylo roof deck can be supported by a lighter structure—saves structural steel. Ease of handling and placing speeds up work and saves on construction costs.

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A Kaylo deck will support a total load of 50 pounds per square foot, with a high safety factor approved by leading code authorities.

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Kaylo Roof Deck is hydrous calcium silicate with insulating value equal to one and one-half inches of standard insulation board.

FIRE-SAFETY

Kaylo Roof Deck is rated incombustible by Underwriters' Laboratories. The slabs alone can withstand fire for more than three hours.

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The smooth, underside of a Kaylo roof deck makes a *completed* ceiling that reflects more than 80% of the light striking it, even without painting or other treatment.

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any school... cut maintenance too!

Here is Ceco-Sterling **Double-Hung** Aluminum Window, series 200-B

In times like these it's just good business to take a second long look when selecting windows for your school buildings.

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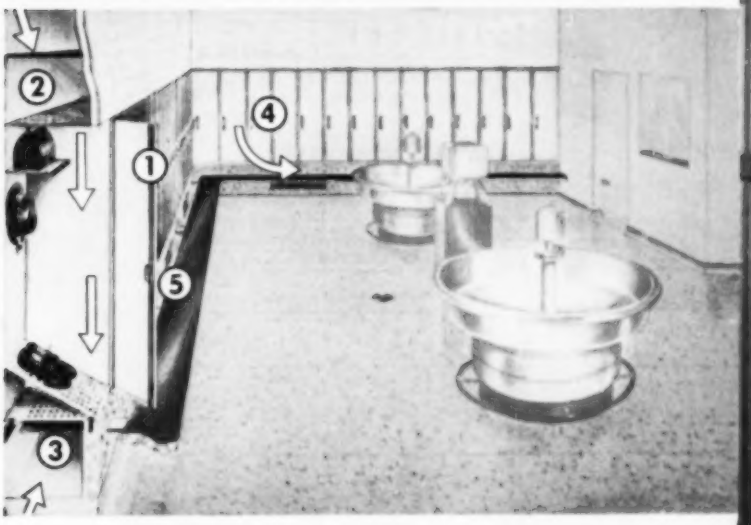
Something New

IN LOCKER ROOM PLANNING



Check the features of these Scott-designed "AIRFLOW" lockers:

1. Solid doors allow no odors to enter or escape.
2. Top plenum through which fresh air enters.
3. Base plenum through which stale air is exhausted.
4. Exhaust vent in locker island base carries off humid stale room air.
5. Benches supported from the island base for convenience in cleaning.

ODOR-FILLED LOCKER ROOMS have always been a plant problem area. To keep fresh air in these rooms, individually ventilated lockers are essential. Now you can introduce self-contained ventilation into lockers without forcing stale air into employee locker rooms.

Your client knows it's good business to make his plant a pleasant, efficient place. Employee morale rises, absenteeism and costs are reduced.

Developed by the Scott Washroom Advisory Service, new "AIRFLOW" lockers, equipped with solid doors, are designed to prevent unpleasant work clothing odors from escaping into the locker room area. Mechanical ventilation draws fresh air into each locker from the top plenum, forces stale air out the base plenum.

This is another example of the aid Scott Washroom Advisory Service Consultants offer to you who plan personal service rooms. This know-how gained from servicing more than half a million washrooms, is yours for the asking.

Contact Washroom Advisory Service, Scott Paper Company, Chester, Penna.

Send for FREE leaflet . . .
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At no cost or obligation, please send me your study of personnel, traffic and maintenance problems, *"Plant Washroom Designing."*

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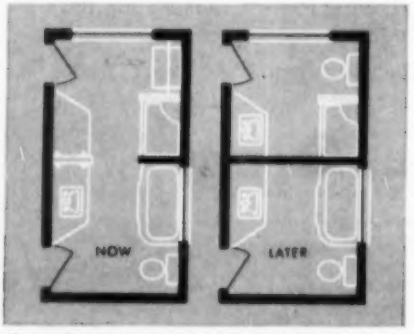
SCOTT

Symbol of Modern Washrooms

Trade Mark "Washroom Advisory Service" Reg. U. S. Pat. Off.

A bathroom that grows with the family

Another of 46 room plans from Crane's Sketchbook of Ideas to help you help your clients visualize bathrooms, kitchens, utility rooms



Now—The bathroom as it looks while the children are young.

Later—How a few simple changes make two bathrooms out of one.

Raising money to buy a home and raising a family are two things that usually go together. That's why so many clients are quick to approve plans that incorporate ideas like this—*a bathroom that grows with the family.*

As the picture shows, there's a section at the rear that starts out as a nursery bath and includes a small Crane Lahoma tub that may be used later as a bath and shower combination. As the children grow up, another lavatory is set in the counter-top space already provided, a water closet goes where you now see the bathinette—then a simple partition, and there are two complete bathrooms instead of one.

This is just one of the 46 thought-starting or easily adaptable room plans illustrated and described in Crane's new Sketchbook of Ideas. The Sketchbook is part of Crane's new service to architects—affords an easy practical way of helping clients visualize and approve new room arrangements.

Also, if you wish, Crane has specific suggestions for arrangement and decoration of any room in the book. Ask your Crane Branch or Crane Wholesaler for full details about this new Crane service to architects.

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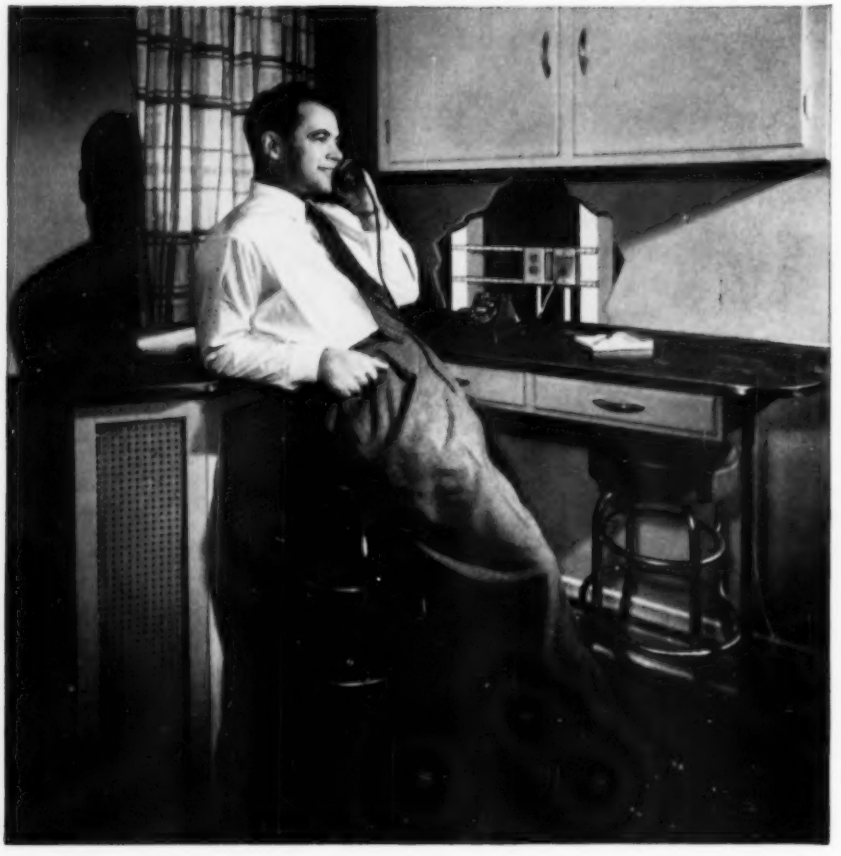
as fundamental as electric outlets



A good plan is always better when it includes symbols for telephone outlets.

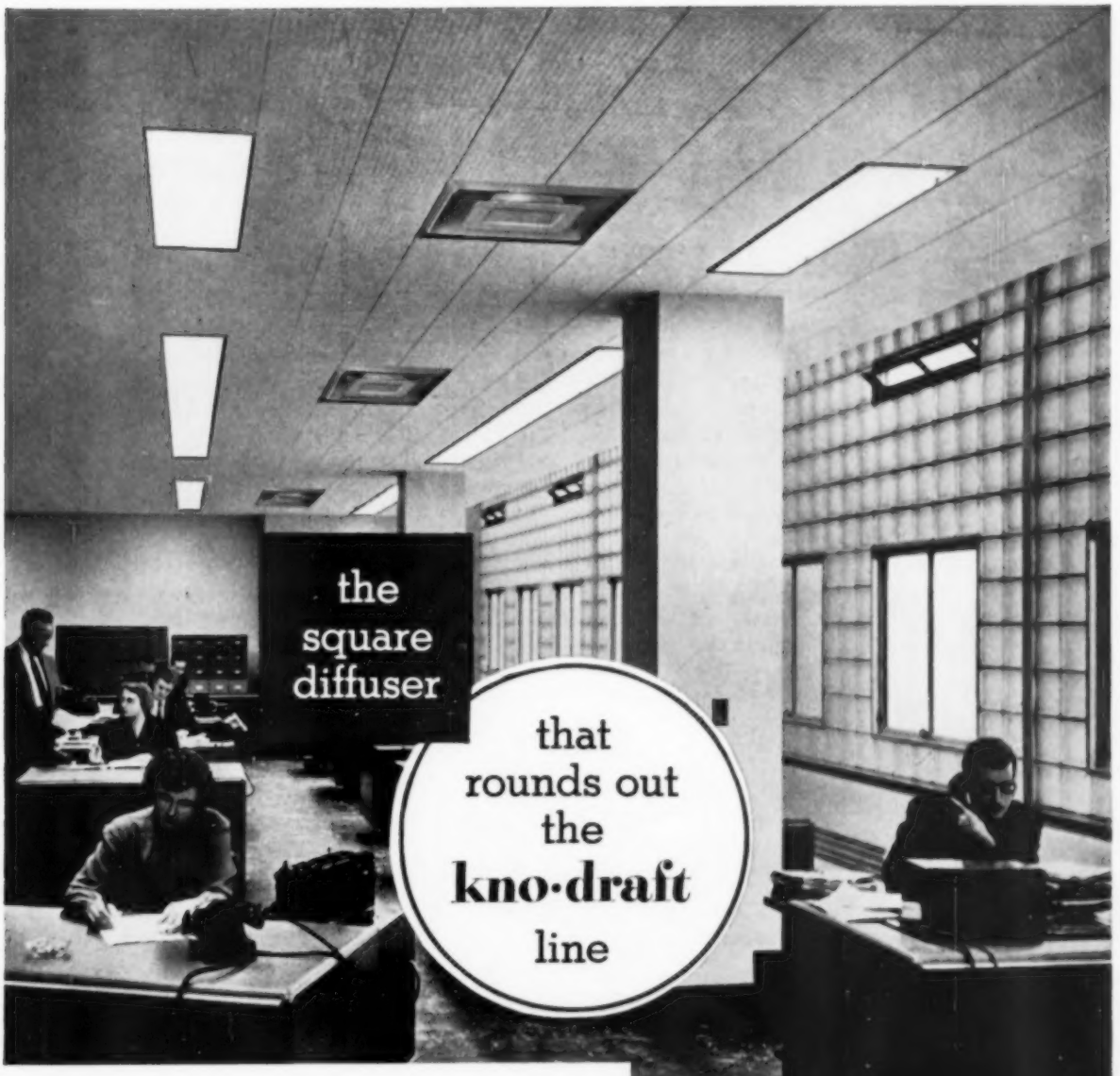
Electric outlets—enough of them in the right places—are important considerations when you lay out the wiring plan of a house.

So are telephone outlets.

By including telephone outlets and raceways in your working drawings and specifications, you assign telephone wires to their proper place—inside the walls where they cannot mar interior trim. It's a thoughtful plus that will be appreciated by your clients.

It's good practice to make concealed telephone wiring a part of every plan. Your Bell Telephone Company will be glad to help. Just call your nearest Business Office.

BELL TELEPHONE SYSTEM



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The picture shows the Kno-Draft *Square* Diffuser, Type KPT, designed for T-bar installations. It snaps easily and snugly into perforated acoustical-type ceilings. For overlapping installation, Type KP is the unit to use.

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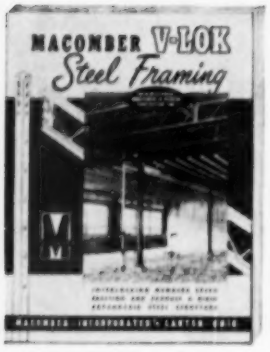
But You Don't Want a Standardized Steel Building—HERE'S YOUR ANSWER



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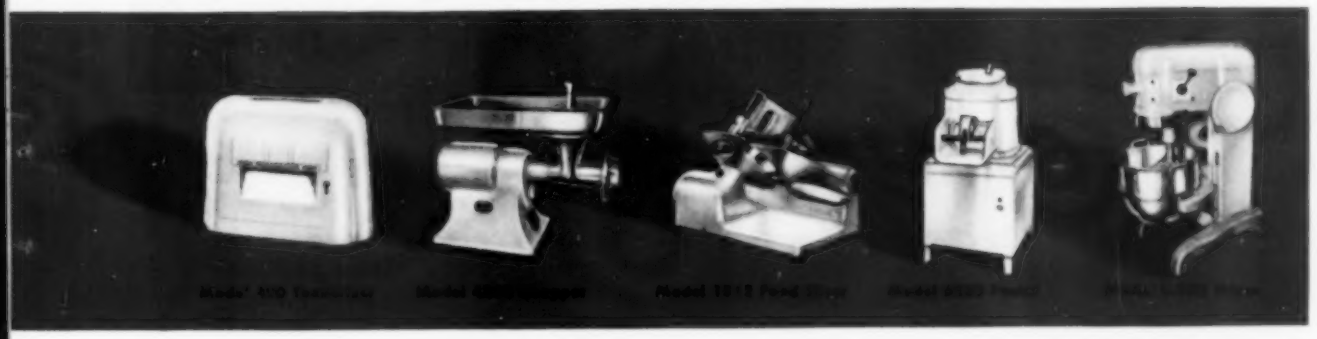
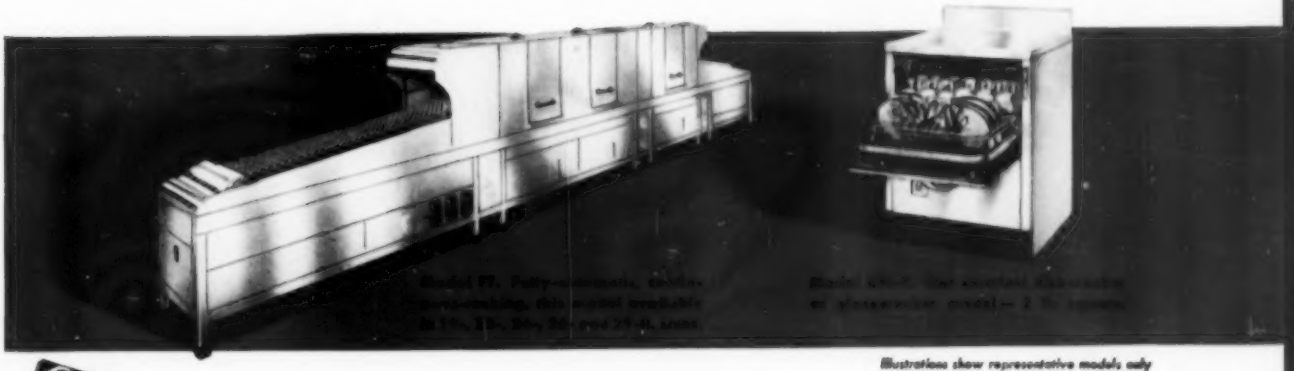


IN THE GREATEST RANGE OF CAPACITIES AND SIZES



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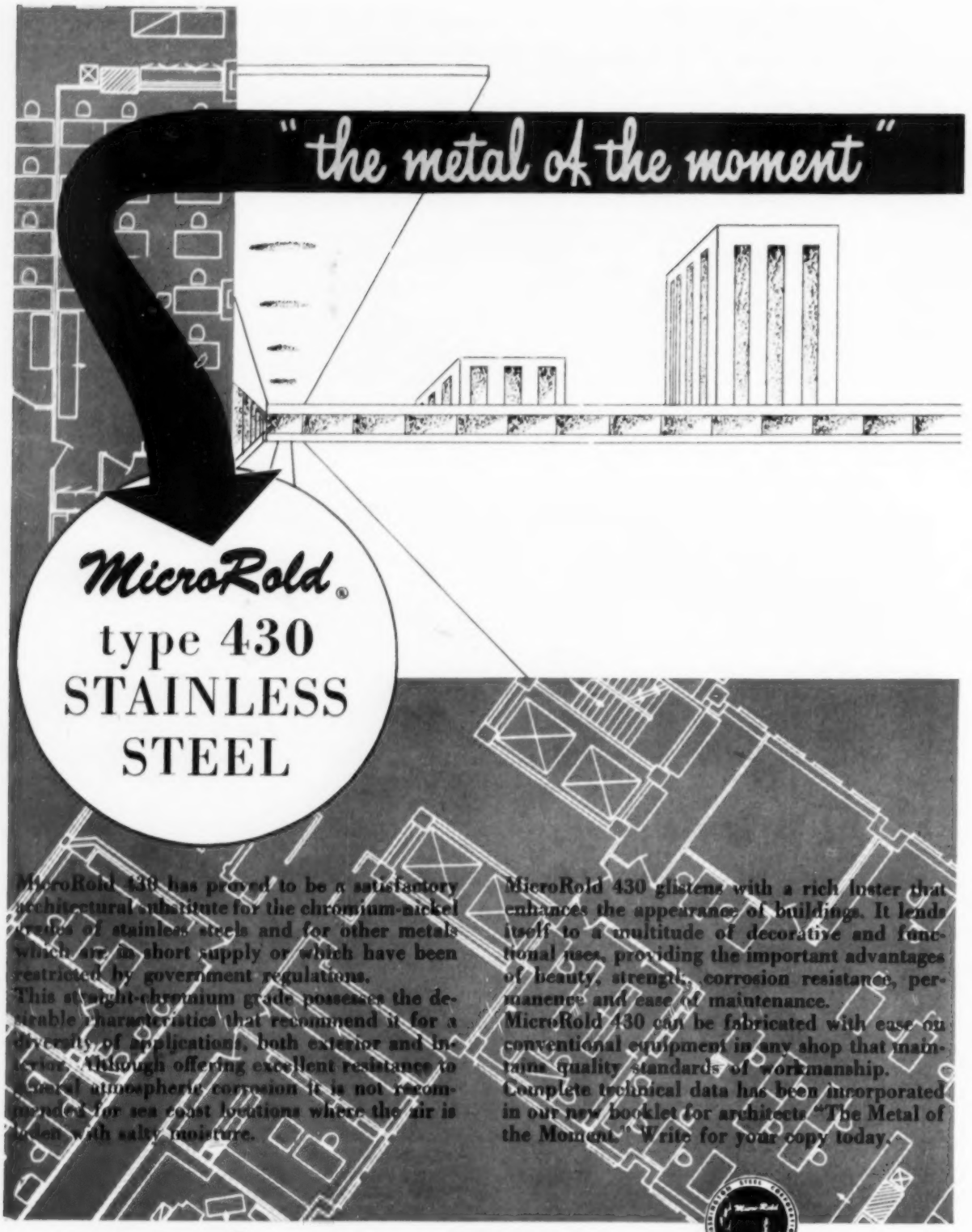

MicroRold 430 has proved to be a satisfactory architectural substitute for the chromium-nickel grades of stainless steels and for other metals which are in short supply or which have been restricted by government regulations.

This straight-chromium grade possesses the desirable characteristics that recommend it for a diversity of applications, both exterior and interior. Although offering excellent resistance to general atmospheric corrosion it is not recommended for sea coast locations where the air is laden with salty moisture.

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MicroRold 430 can be fabricated with ease on conventional equipment in any shop that maintains quality standards of workmanship.

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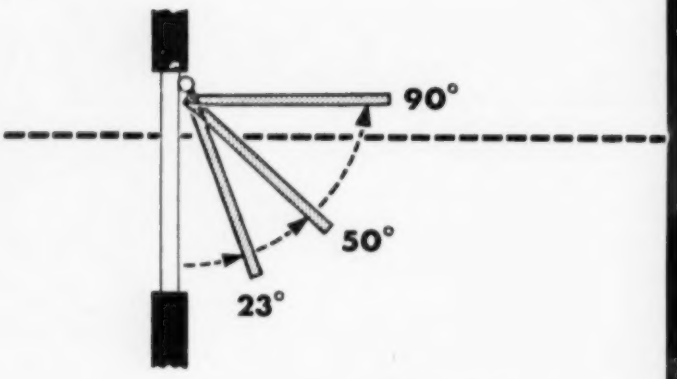

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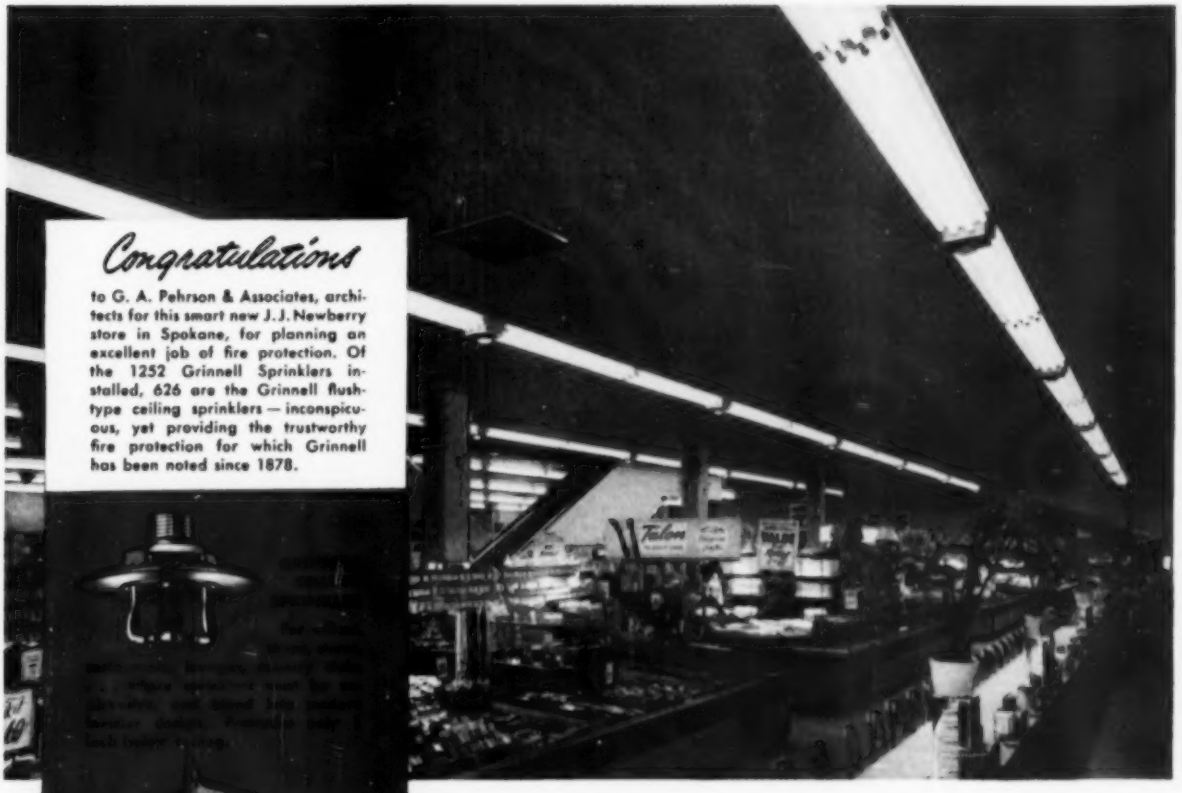
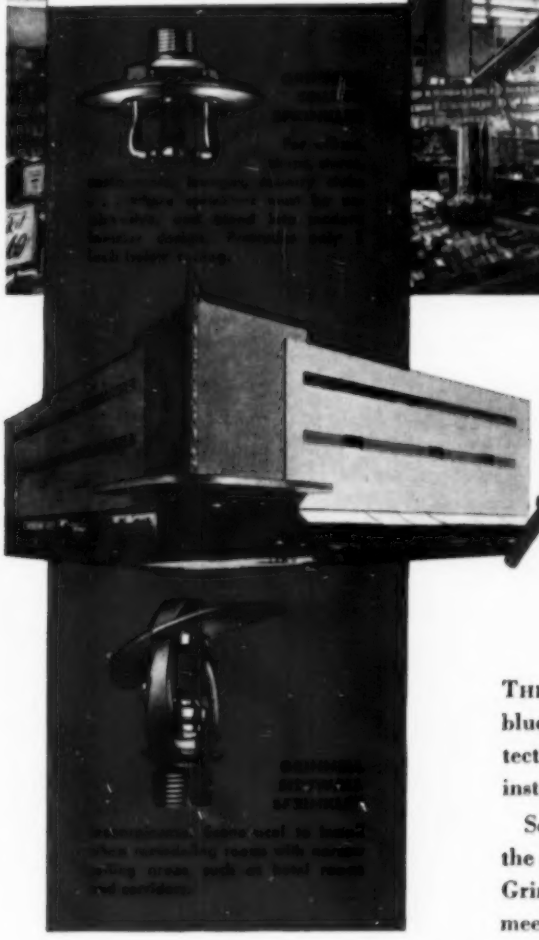


Congratulations

to G. A. Pehrson & Associates, architects for this smart new J. J. Newberry store in Spokane, for planning an excellent job of fire protection. Of the 1252 Grinnell Sprinklers installed, 626 are the Grinnell flush-type ceiling sprinklers — inconspicuous, yet providing the trustworthy fire protection for which Grinnell has been noted since 1878.



Smartly Planned

Fire Protection

at Newberry's in Spokane

THE BEAUTY OF PLANNING your fire protection systems in the blueprint stage is that you not only get the most efficient protection, but also systems that *harmonize* with your interiors, instead of marring them. And that makes your clients happy.

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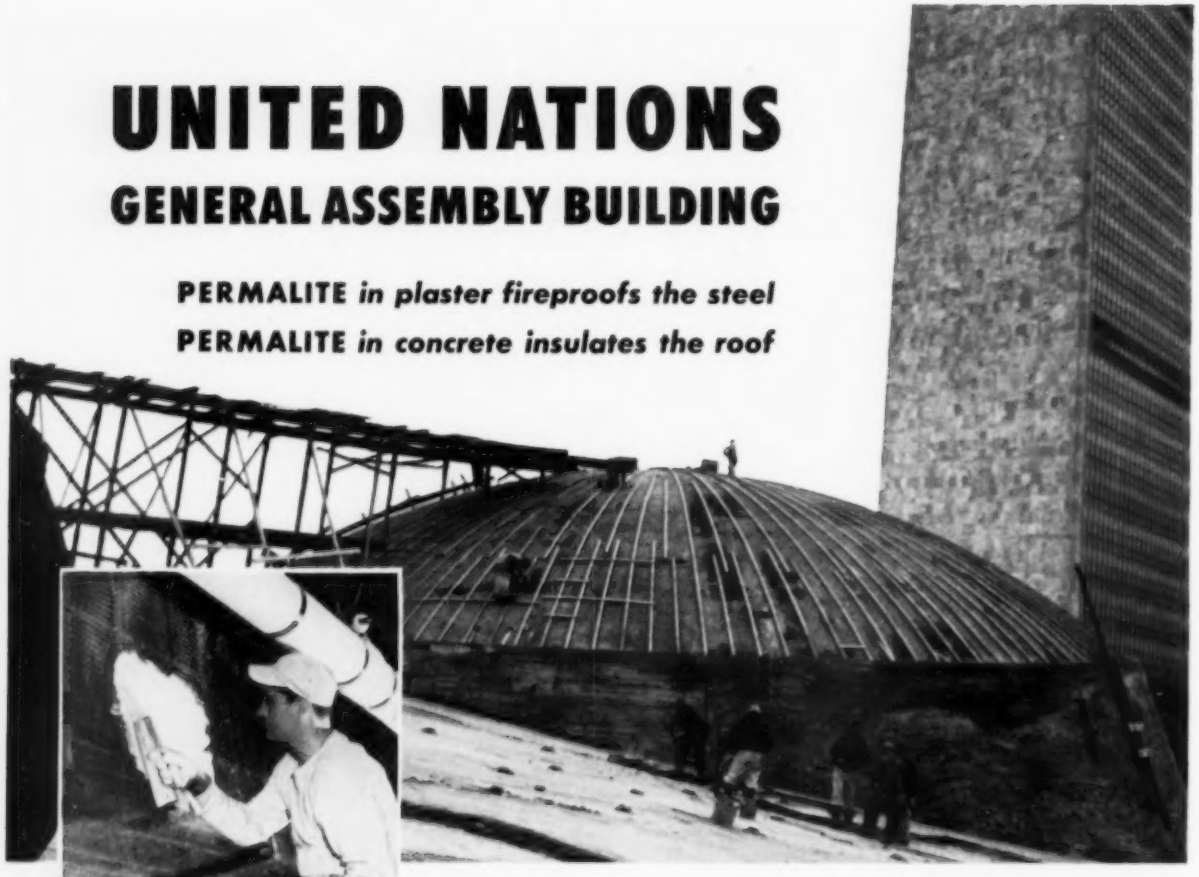
GRINNELL
FIRE PROTECTION SYSTEMS

Manufacturing, Engineering and Installation of Automatic Sprinklers Since 1878

UNITED NATIONS
GENERAL ASSEMBLY BUILDING

PERMALITE *in plaster fireproofs the steel*

PERMALITE *in concrete insulates the roof*



54,000 sq. ft. of plaster with Permalite were used to fireproof steel not only in General Assembly Building but also in two meeting halls. Plaster was applied 1" thick on expanded metal lath over steel beams, girders, trusses.

500 cubic yards of concrete with Permalite were poured as roof fill—reducing dead load and heat transmission. The contractor "...found Permalite to be a workable material, easy to mix, place and screed without special equipment."

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The planners of the United Nations General Assembly Building have used Permalite for two important applications. Permalite, the leading perlite aggregate, was specified in plaster for fireproofing the structural steel; and in concrete for insulating roof fill. As a result, the maximum 4-hour fire rating for supporting steel has been achieved; and the roof has been insulated by lightweight concrete. For insulation, fire-resistance, lightweight and better workability, plan to use Permalite on your future jobs. Permalite meets rigid specifications of Underwriters' Laboratories fire test. Frequent production control tests assure uniformity and consistently high quality in these aggregates. Complete data in our bulletins PA-26, PA-7 and PA-9.

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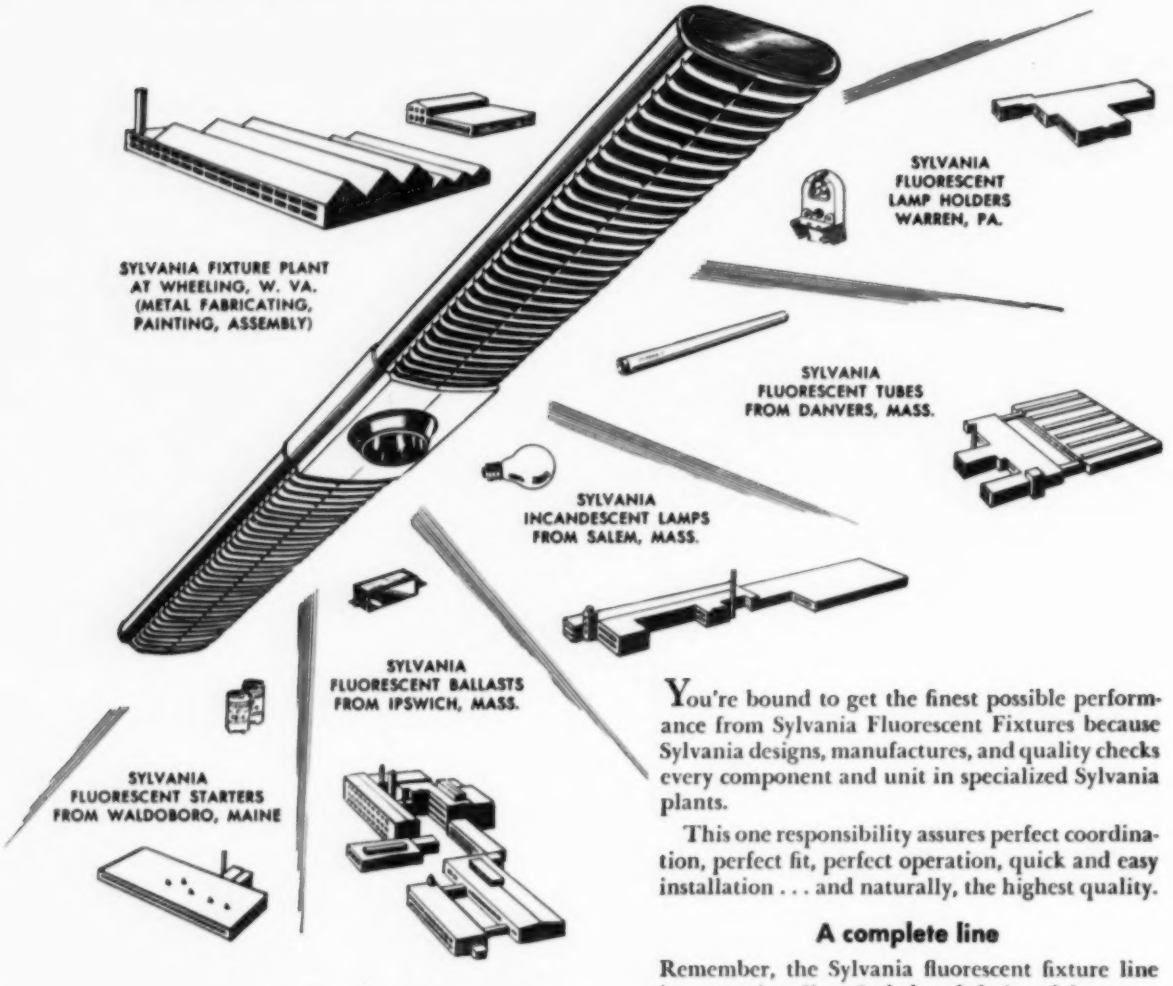
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the issue of INTEGRATION

by Sibyl Moholy-Nagy*

Each period has its sacred herring—that certain topic that comes to the minds of editors, program chairmen, and dissertation aspirants when all factual material has been exhausted. The Beaux Arts generation ran themselves ragged in search of "absolute beauty." The first Expressionists, at the turn of the century, discussed "meaning in art." Between the wars it was first "self-expression" and later "nonobjectivity"; and we, today, are blessed with "integration of painting, sculpture, and architecture." Five leading magazines, at the latest count, have devoted articles and questionnaires to this topic, and round-table discussions and symposia are the vogue of the day. In most cases, the pattern is the same: sculptors and painters (indigent and indignant) try to prove to slightly sarcastic architects that owing to their ignorance, poor taste, and a mean disposition against sharing fees, modern buildings are deprived of an integration with painting and sculpture. The inevitable climax is the historical argument, running along such lines as a recent article by W. Weismann and S. Fogel in *The College Art Journal*:

"What is so distressing is to find that so many of our younger architects seem to be so shockingly ignorant of our historical past . . . They seem never to have heard of the glorious cathedrals of the 13th Century with their sculptured façades and stained glass windows, without which the architecture would have been poorer indeed."

One might, however, be much more distressed at the "shocking ignorance" of the artists who seem not to know why medieval sculpture was put on monumental façades, and why it has vanished today. From an art-historical standpoint, at least, the younger generation of architects show a much more astute historical instinct than do painters and sculptors.

The most fundamental historical fact is that buildings change their meaning over the centuries, and that the importance of decorative forms changes with the changing significance of a structure for the community. Simplifying an enormously complex historical process, it can be said that architectural meaning went through three stages, that were most forcefully expressed in the decorative use of painting and sculpture. These three stages were: the *Magic;* the *Symbolic* and its manneristic variation, the *Allegoric;* and the *Formalistic.* We are now privileged to witness the gradual emergence of a fourth stage: the *Functional-Technological.*

•

In the first phase, the *Magic*, art and architecture were one. The Trilithons of Stonehenge; the Pyramids at Giza; a Babylonian Palace Gate, its structure clad in lion images, were magic incarnations. A building and its decorative attributes were cunningly designed by man to coerce supernatural powers to take possession. Form was not symbolic of spirit, but spirit itself. Architecture was the medium of magic.

Without further comment we are all agreed that this magic unity of form and contents has been lost forever. No one could be made to believe today that worshipping a dollar image on a superbank building would bring prosperity, or that kissing the big toe of the Statue of Liberty would revoke the McCarran Act.

•

The second phase, the *Symbolic* meaning of art in architecture, was started by the early Greeks, who admitted frankly to themselves that Zeus was philandering all over the globe while his brazen image stood safely in his sacred temple at Olympia. Building and decoration ceased to be active demoniac, as they had been in the Magic period. They now represented implied meaning. The artistic medium

(Continued on page 180)

* Instructor in Design Analysis and Lecturer on Architectural History, Pratt Institute, Brooklyn, N. Y.; Author and Critic.

consolidated elementary school

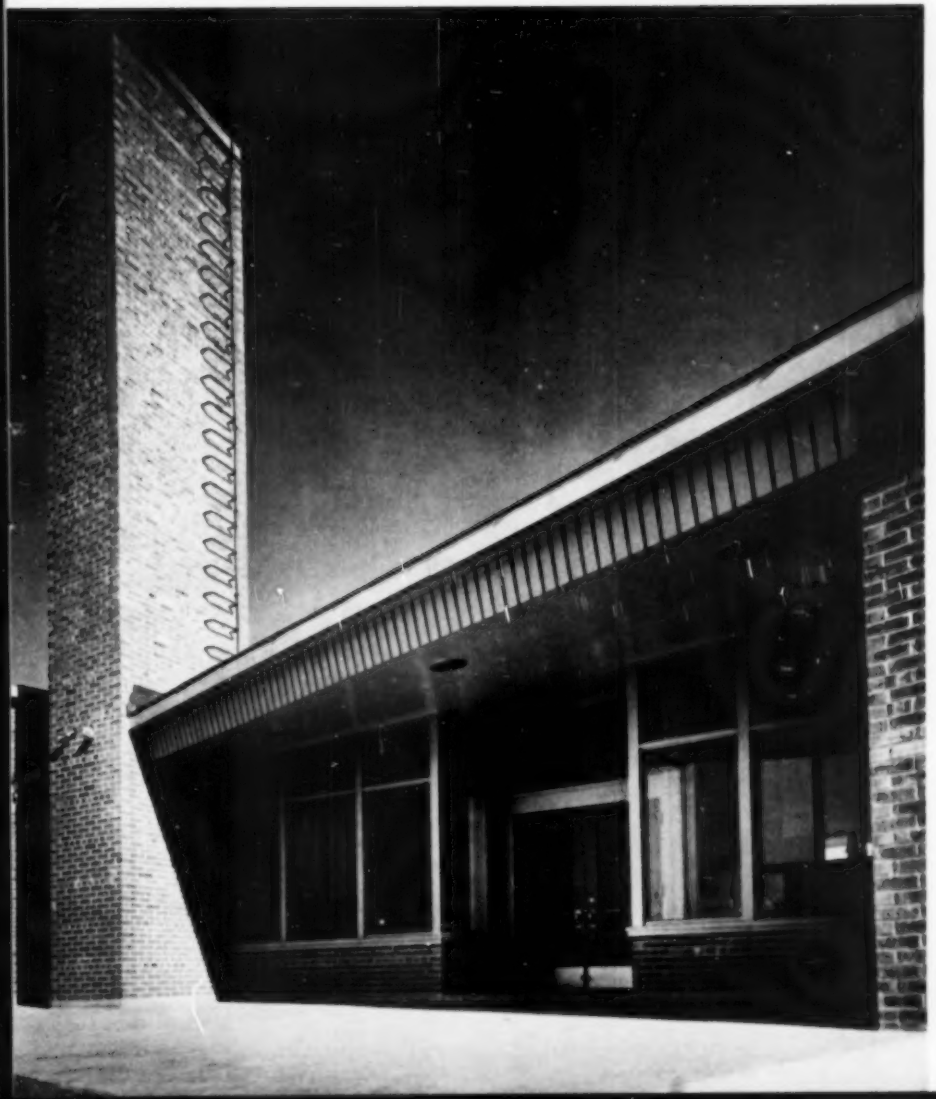
The Barrington Countryside Elementary School is part of a program that involved consolidation of sixteen small school districts in the surrounding area. The particular need was for a building that would house not only the educational needs of children in kindergarten and grades one through eight, but also multi-use facilities that would be used by the community as well as for immediate school purposes.

Location of the school on a rolling site less than a mile from the Community Consolidated High School simplified the problem of bus transportation. The architects exploited the land contours to produce a workable, two-level solution, each level opening to grade. On the lower floor, in addition to the cafeteria, kitchen, and arts room, are two northeast-oriented classrooms for the seventh and eighth grades. The southwest wing of the upper level (*above right, acrosspage*) has north-facing classrooms for the first through fourth grades (a kindergarten, with separate entrance, is later to be added to the end of this wing), while the fifth and sixth grades occupy the two rooms in the other wing. Temporarily, the kindergarten operates in the multi-use playroom.

Bilateral lighting of the classrooms involves the entire cross-section of the building—south or southwest window walls along the corridors, clerestories above coat-storage units on the classroom side of corridors, and wall-to-wall windows on the exterior walls of the rooms.

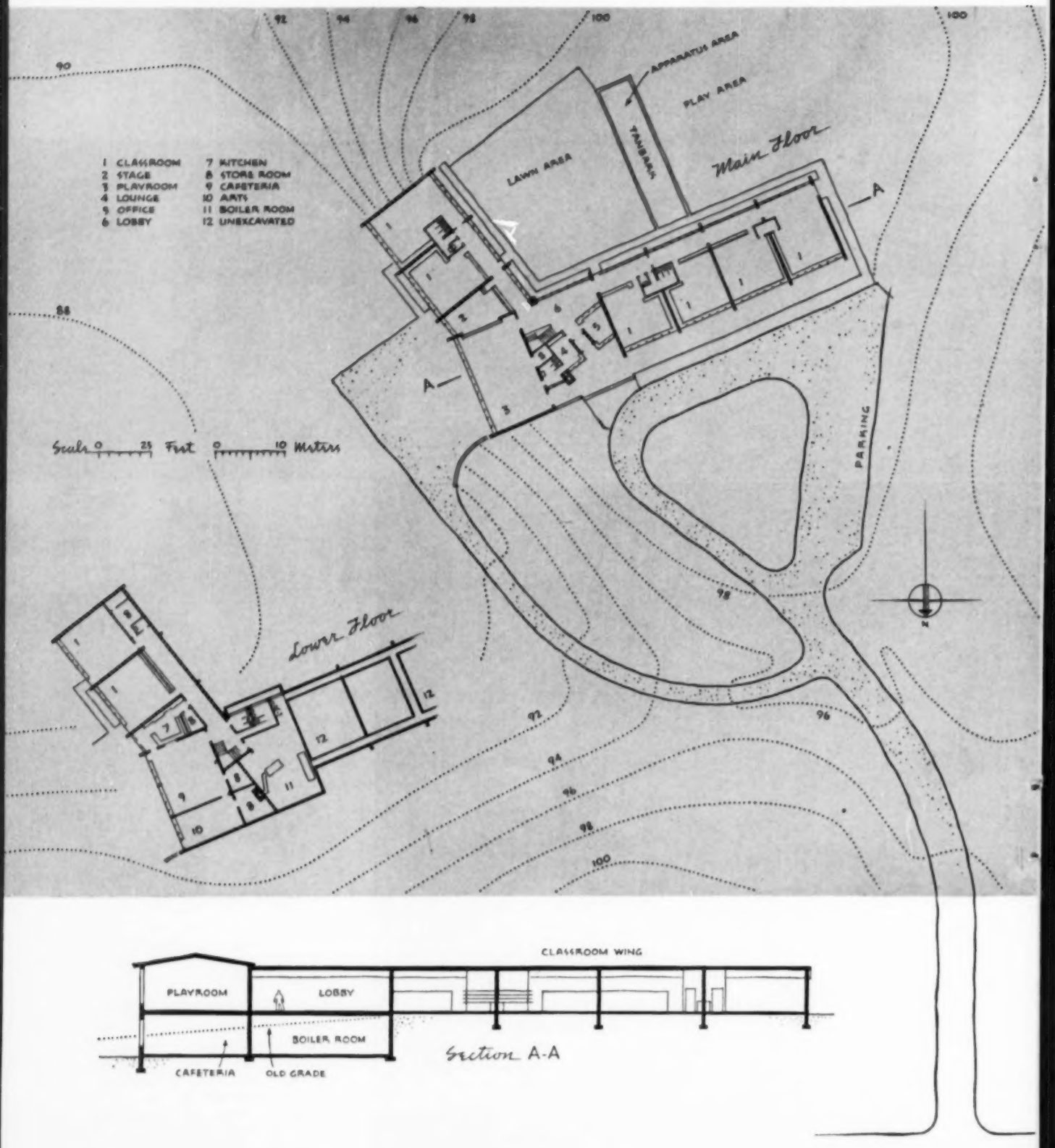
Structurally, the system consists of a combination of brick-and-steel frame, with concrete-block partition walls between classrooms. Resting on the latter and spanning the 28-foot width of the rooms are standard steel-bar joists that in turn support the gypsum-deck roof. Flooring is asphalt tile, and ceilings are finished with acoustical tile, the ceiling line following the angle of the pitched roof. The clerestories above the coat-locker corridor walls allow a continuity of ceiling view that increases apparent size of rooms. Concentric-ring incandescent fixtures provide artificial lighting, while the heating system is a simple hot-water convector installation.

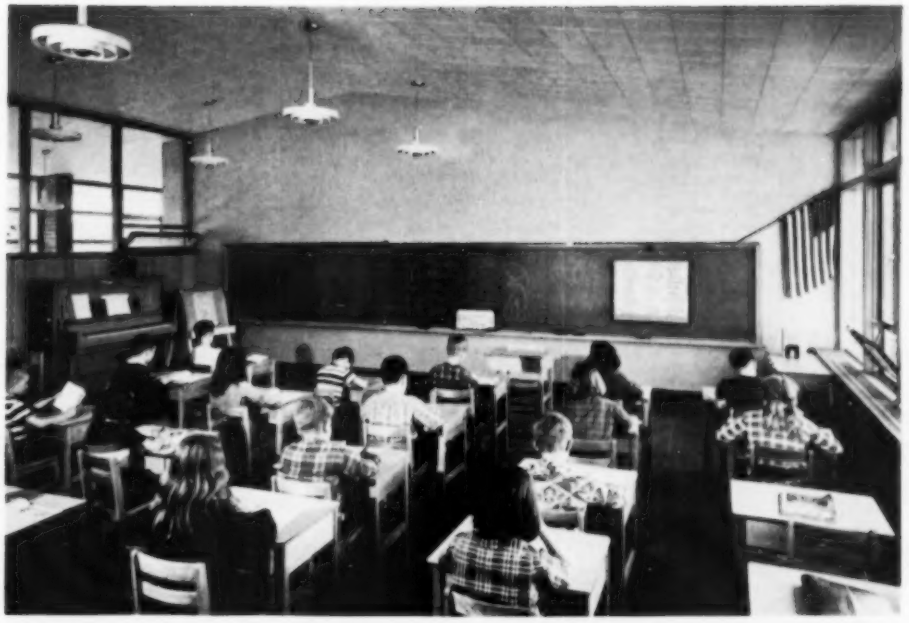
location	Barrington, Illinois
architects-engineers	Perkins & Will
mechanical engineer	E. R. Gritschke
general contractor	Chell & Anderson



Use of a simple pitched roof is the one concession the architects made to the original suggestion that the new building echo in some measure the atmosphere of a Colonial structure that was one of the buildings the new school replaced. *Photos: Hedrich-Blessing*

consolidated elementary school



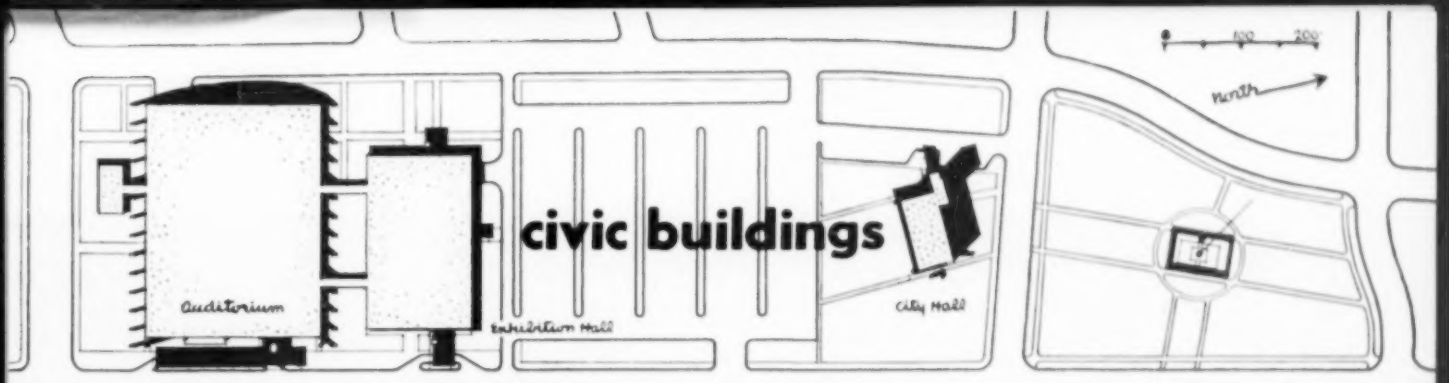


Typical classrooms (left) *are 28 feet wide by 30 feet deep; the acoustical-tile ceilings follow the roof pitch; chalkboards are mounted on the load-bearing concrete-block partition walls.*

The nonload-bearing corridor walls (below) *are made up of coat-storage units on the corridor side. On the classroom side, above built-in shelving and a teacher's storage closet, the soft pine surface is used for tack space.*

consolidated elementary school

The first-grade room (large photo) *occupies the entire end of the southwest wing; door at right leads to main corridor. The multi-use playroom* (bottom photos) *has a stage at one end that is temporarily used for the kindergarten. The room serves as gym and also for a variety of school and community functions.*



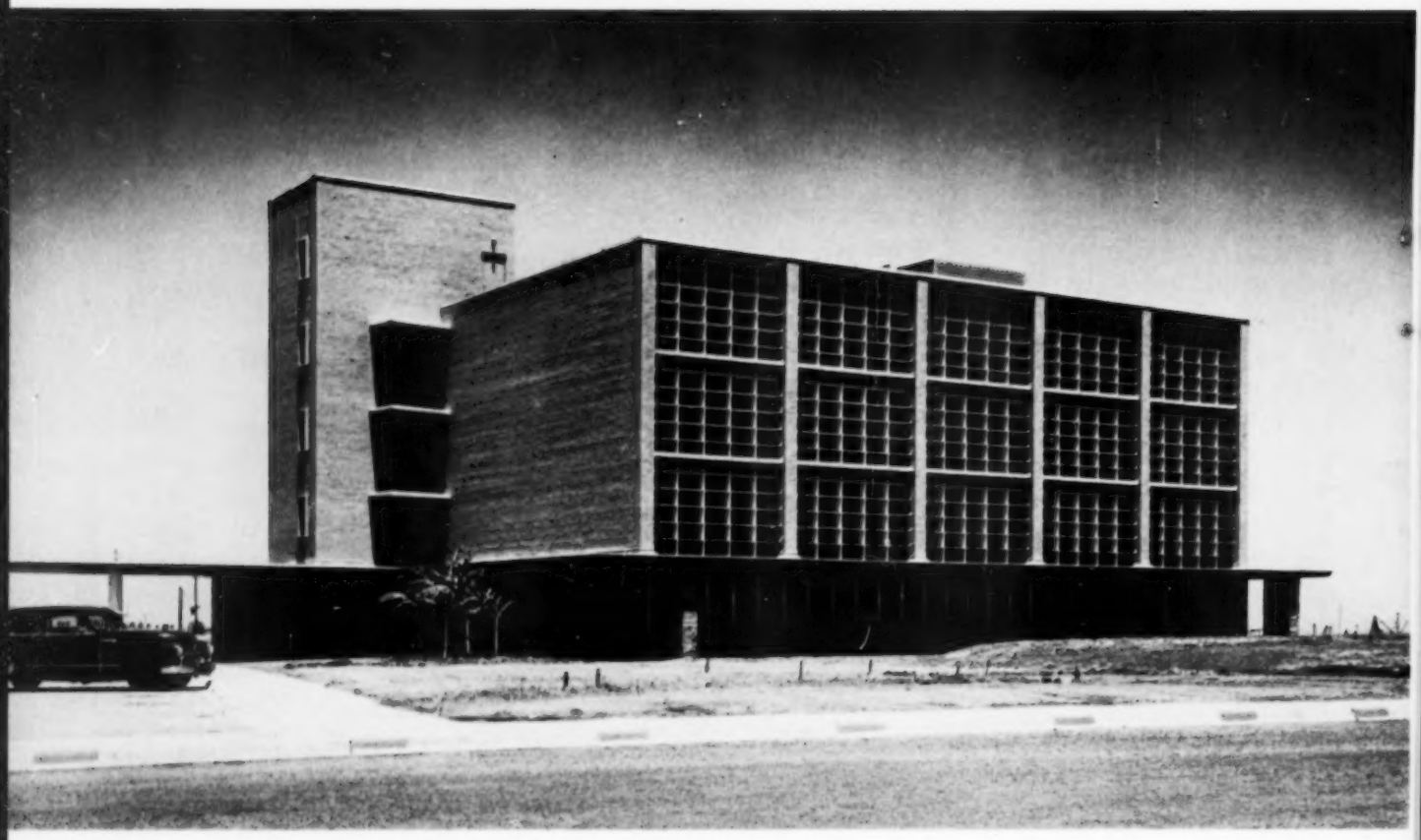
civic buildings

In 1942, Corpus Christi, Texas, was one of three cities selected by the National Resources Planning Board with which to attempt a technique (that other cities might adapt) for forecasting future growth and determining comprehensive plans for healthy and economic development—at that time, of course, with particular concern for postwar potentials to come *(August 1943, New Pencil Points, pages 31-50)*. The activity went forward with full co-operation of the Mayor and City Council, the City Planning Commission, the Planning Committee of the Chamber of Commerce, and numerous other local, state, and federal agencies, as well as private groups. The result was a broad-outline sketch of Corpus Christi's future development—an outline has been partially filled in since—and of which the civic structures shown in this study form one important part. The technical consultant loaned by the Urban Section of NRPB to work with the Corpus Christi groups was Sam Zisman, who currently is an architect and planning consultant, with offices in San Antonio. One of the local architects who volunteered his services to the program was Richard S. Colley, architect of the three civic buildings shown in this presentation.

All three of the buildings—the City Hall, Exhibition Hall, and Chamber of Commerce Building—are located on Shoreline Drive, bordering the Gulf waterfront, and are part of an extensive Bayfront Development for which hotels, tourist accommodations of all sorts, and various resort and recreational facilities are destined. The City Hall and Exhibition Hall (and future Civic Auditorium) are elements of the new Civic Center *(drawing above)* and are grouped toward the southern end of the 2-mile long Bayfront area, while the Chamber of Commerce Building is located several blocks to the north, on land donated to the Chamber. All of the buildings, however, have the same general relation to the water and to the City's central business district.

In addition to representing a fresh approach to the design of civic buildings, these are important structurally—two of them utilizing the lift-slab system of construction—and for their exploration of built-in elements for sun and light control. But perhaps their greatest significance lies in the fact that they are actual parts of a broad, long-range city-planning program. So often, one finds civic plans—even the simplest over-all proposals—merely relegated to the storage vaults of city halls.

location	Corpus Christi, Texas
architect	Richard S. Colley
structural engineers	Blucher & Naismith
mechanical engineer	T. A. Vernor, Jr.
foundation engineers	Greer & McClelland
general contractors	Braselton Construction Company J. A. Walsh Construction Company



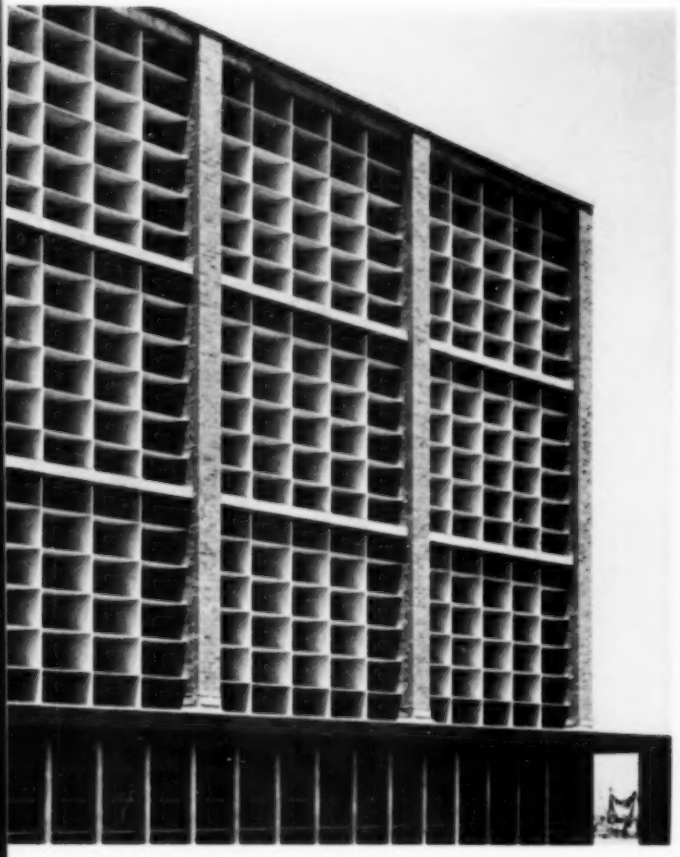
city hall

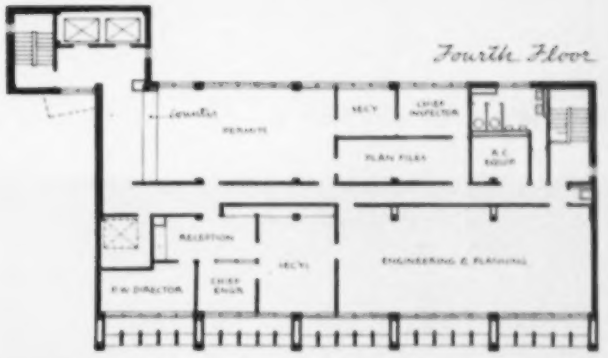
The City Hall was designed to house all city administrative offices (except for police and corporation courts, which are in other buildings); public utilities; tax offices; building inspection, city planning and engineering departments. The building is located just north of the Exhibition Hall and a future, arena-type auditorium, and the three will be integrated with parks and parking areas.

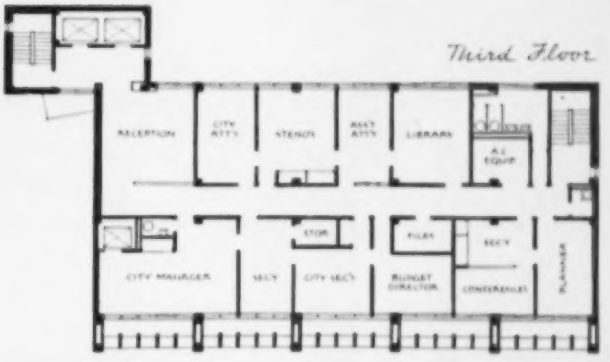
The site consists of a 14-foot hydraulic fill between the two shoreline drives adjoining Nueces Bay. As consolidation of this fill is still incomplete, the foundations are wood piling with concrete caps to receive the building's structural-concrete frame. The basement (in which are the tax assessor's offices and numerous storage and equipment rooms) is completely waterproofed with membrane waterproofing, to withstand hydrostatic pressure.

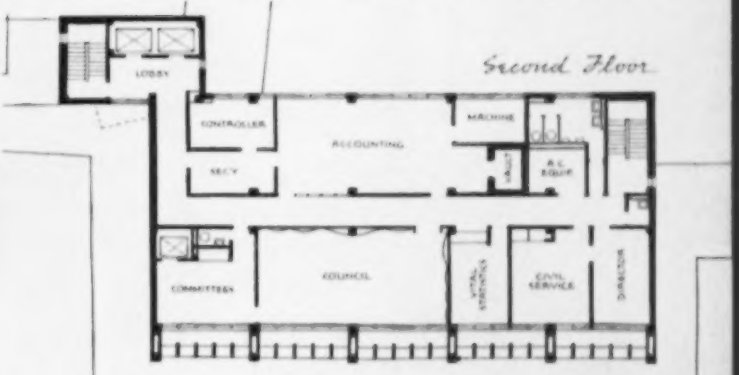
Since the building is exposed to salt spray much of the time, with the prevailing breeze from the southeast, no ferrous metal is exposed to the weather; even the fascia cover is of slate. Exterior walls consist of brick outside; a mineral-wool layer; and concrete block, plastered, on the interior. Outside the south wall is a brise-soleil grid consisting of precast notched verticals (4″ x 2′-6″ x 9′-10″) into which fit the 2″ x 2′-0″ x 3′-1″ horizontal members.

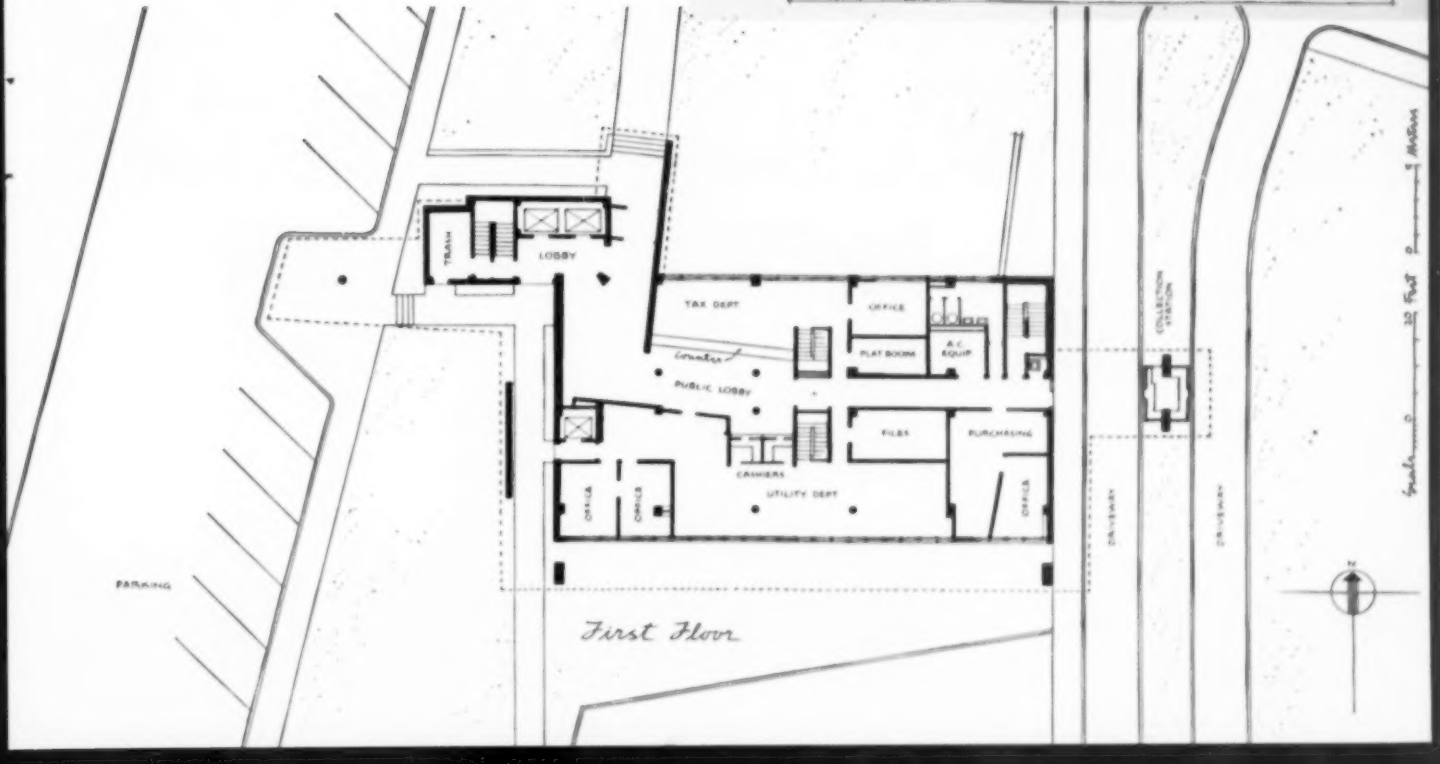
The roofing is built-up, over glass-fiber boards. Flooring is asphalt or quarry tile; ceiling surfaces are acoustic plaster. Aluminum, awning-type windows are used generally, with some fixed glass in wood or aluminum frames. Warm-air heating served from a natural-gas-fired furnace, supplements the air-conditioning system.




Fourth Floor
PERMITS
SECY
CHIEF INSPECTOR
PLAN FILES
A.C. EQUIP
RECEPTION
SECY
ENGINEERING & PLANNING
D.W. DIRECTOR
CHIEF ENGR.


Third Floor
RECEPTION
CITY ATTY
STENOG
ASST ATTY
LIBRARY
A.C. EQUIP
STOR.
FILES
SECY
CITY MANAGER
SECY
CITY SEC'Y
BUDGET DIRECTOR
CONFERENCE
PLANNER


Second Floor
LOBBY
CONTROLLER
ACCOUNTING
MACHINE
SECY
VAULT
A.C. EQUIP
COMMITTEES
COUNCIL
LEGAL STENOS
CIVIL SERVICE
DIRECTOR


TRASH
LOBBY
TAX DEPT
OFFICE
PLAT ROOM
A.C. EQUIP
COUNTER
PUBLIC LOBBY
CASHIERS
FILES
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UTILITY DEPT
OFFICE
OFFICE
OFFICE
PARKING
DRIVEWAY
DRIVEWAY
COLLECTION STATION
Scale 1/8" = 1 FOOT
N
First Floor

In the first-floor public lobby (above) *a long counter serves the tax department; wall surfaces include marble and ledgestone. For detail of luminous ceiling in the fourth-floor engineering and planning department* (right), *see page 149.* Photos: Ulric Meisel

construction

Foundation: beam-and-slab concrete, City Hall: over wood piling—Universal Atlas Cement Company, Koppers Company, Inc. **Structure:** City Hall: cast-in-place reinforced concrete; Exposition Hall: lift-slab construction system. **Wall surfacing:** exterior: brick—Acme Brick Company; marble, stone, and slate; interior: Exposition Hall: exposed masonry, City Hall: plaster—U. S. Gypsum Company; rest rooms, toilets: ceramic and quarry tile—Mosaic Tile Company and Summitville Tiles, Inc. **Floor surfacing:** City Hall: asphalt tile— Armstrong Cork Company, quarry tile—Summitville Tiles, Inc.; Exposition Hall: exposed concrete. **Ceiling surfacing:** City Hall: acoustic plaster—Zonolite Company; Exposition Hall: acoustic tile—Celotex Corporation. **Roof surfacing:** built-up asphalt and gravel —Barrett Division, Allied Chemical & Dye Corporation. **Waterproofing:** City Hall basement: membrane waterproofing with plaster coat. **Insulation:** glass-fiber-board on roofs—Owens-Corning Fiberglas Corporation; City Hall: mineral-wool batts in wall—U. S. Gypsum Company. **Roof drainage:** City Hall: interior cast-iron downspouts and roof drains. **Partitions:** City Hall: gypsum block and plaster—U. S. Gypsum Company; Exposition Hall: lightweight concrete block—Texcrete Company. **Windows:** aluminum awning-type sashes, fixed-glass in wood or aluminum frames—Brauer Aluminum Company and Ludman Corporation; DSB window glass and fixed plates—Libbey-Owens-Ford Glass Company. **Doors:** Exposition Hall: solid-core flush wood, entrance, and hollow-core flush wood, interior—Mengel Company; wood-faced calcium-silicate-core fire doors; Exposition Hall: paneled-wood overhead —Overhead Door Company; City Hall: insulated flush-steel elevator—Dahlstrom Metallic Door Company; City Hall: hollow-glazed aluminum entrance—Aerobat Manufacturing Company and Alumidor Corporation. **Hardware:** tubular wrought-aluminum lock sets, surface-mounted, bronze-plated door closers and panic exit—Russell Erwin Division, American Hardware Company and Yale & Towne Manufacturing Company; prime-coated steel hinges—The Stanley Works. **Paint:** exterior: portland cement paint—General Paint & Varnish Company; interior: Exposition Hall: flat oil paint—Pittsburgh Plate Glass Company; City Hall: plywood finished with clear lacquer—Breinig Brothers, Inc.

equipment

Public address system: Exposition Hall—Stromberg-Carlson Company. **Elevators:** City Hall: car switch-control—Westinghouse Electric Corporation; geared machines, flush-steel cabs with center-opening doors. **Lighting fixtures:** City Hall: recessed incandescents—General Lighting Company, recessed fluorescent strips over acrylic-plastic ceiling (drafting room)—Sunbeam Lighting Company, Day-Brite Lighting, Inc., and Rohm and Haas Company; Exposition Hall: suspended incandescent reflectors—General Lighting Company. **Electrical distribution:** service entrance switch—Westinghouse Electric Corporation; fiber-and-asbestos cement duct system in concrete; panelboards, multibreaker—Bulldog Electric Products Company and Square D Company; wire and cable—General Cable Corporation; rigid-galvanized conduit; wiring devices—Arrow-Hart Electric Company and Hegeman Electric Company. **Plumbing and sanitation:** water closets, tubs, lavatories, water heater—Crane Company; toilet seat—Olsonite Plastics Division, Swedish Crucible Steel Company; flush valves with vacuum breaker—Sloan Valve Company; chrome-plated brass accessories—Hall-Mack Company; cast iron (waste and vents), copper (water), black steel (gas), and wrought iron (fire lines) pipes. **Heating:** warm air; fire tube, front breeching boiler—Kewanee Boiler Corporation, Division of American Radiator and Standard Sanitary Corporation; natural gas; galvanized-steel ducts; automatic controls — Minneapolis-Honeywell Regulator Company; Exposition Hall: vertical direct drive roof fans—Hunter Fan and Ventilating Company. **Air conditioning:** chilled-water central system, reciprocating direct-drive compressor, blowers—York Corporation; Freon 12 refrigerant—E. I. Du Pont de Nemours and Company (Inc.); adjustable grills—Tuttle and Bailey, Inc.; cleanable rechargeable filters—Research Products Corporation; forced draft cooling tower—The Marley Company, Inc.; controls zoned by floors—Minneapolis-Honeywell Regulator Company.

The Council Chamber is on the south (brise-soleil) wall; serpentine wall surfaces made of oak siding supplement the acoustic-plaster ceiling in assisting sound control.

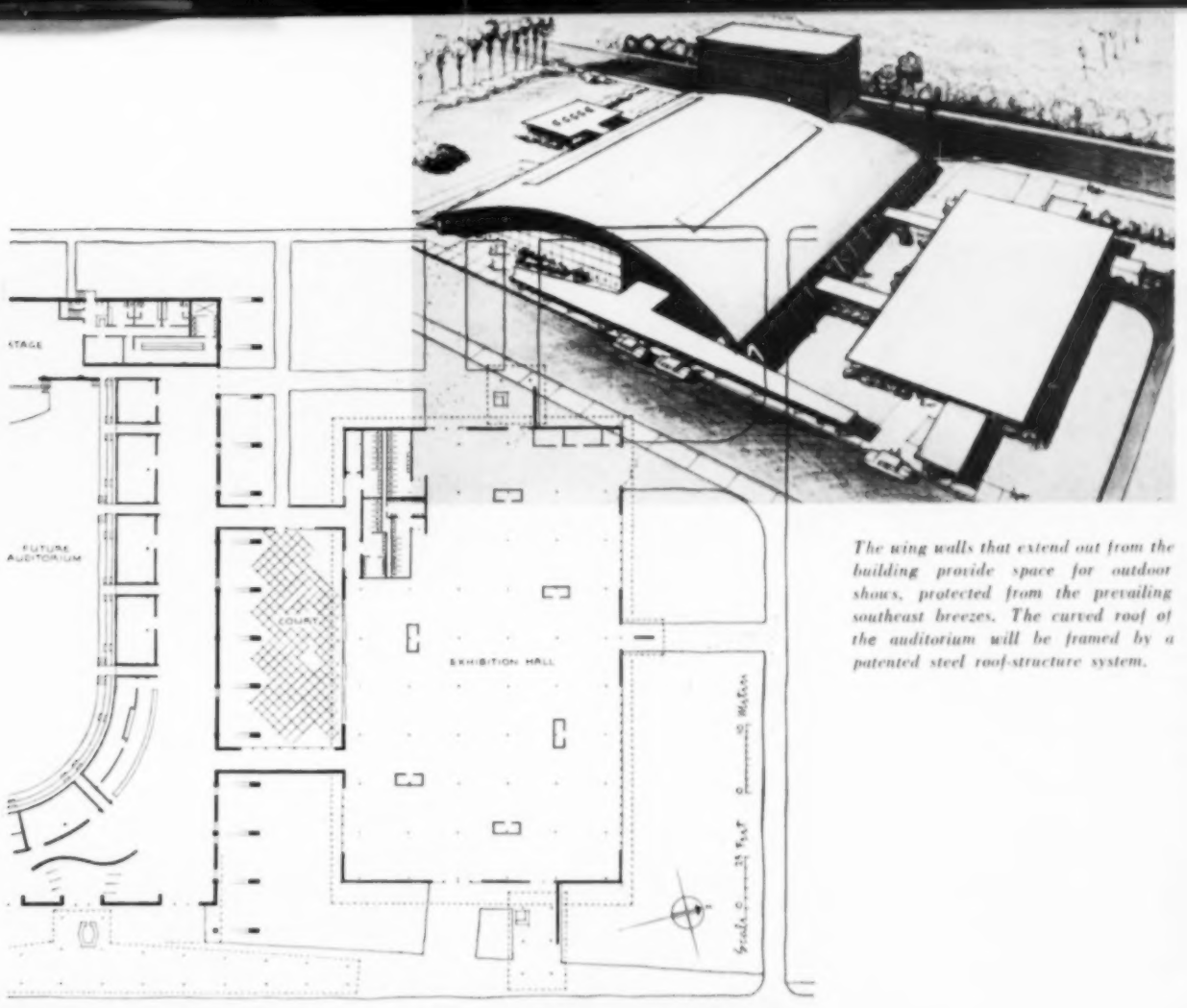
exhibition hall

Built to accommodate immediate civilian-defense needs and also as the City's permanent exhibition hall, this building, as indicated in the rendering (*acrosspage*) and in the partial plan, will eventually be adjoined on the south by the great civic auditorium that was planned from the start as an integral part of the center.

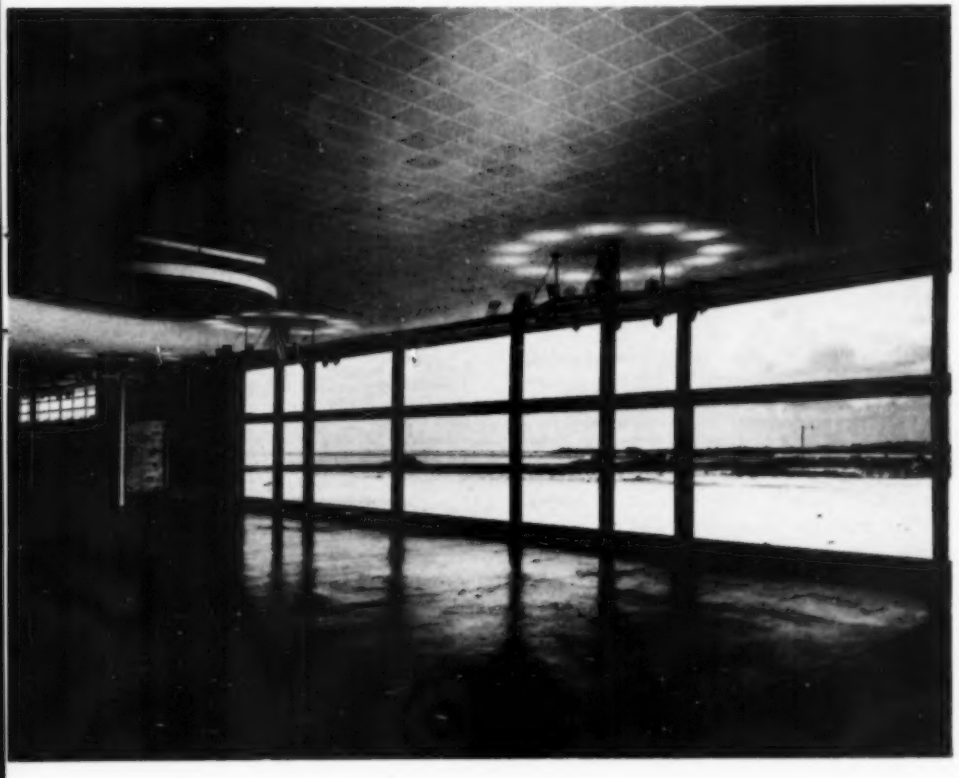
In designing the exhibition hall, the main requirement was for a large, flexible space that could be readily adapted for all sorts of uses—expositions, merchandise exhibits, art shows, dances, auto shows, etc. Among the technical problems to be solved was the need to have utility connections—gas, water, sewer, and power—available at any point. Another requirement was to have a public-address system and pickup points for radio broadcast, etc., so arranged that they could be operated separately, or in conjunction with the future auditorium.

The latter will have seating space for approximately 7000 when the stage (suitable for road shows and productions of all sorts) is in use. Arena seating will be provided for tennis, boxing, basketball, etc. The washroom and toilet facilities in the southwest corner of the exhibition hall will serve both buildings.

The Youtz-Slick lift-slab structural system was used for the exhibition hall. (*For discussion of the structural possibilities of this system; see related technical article, pages 93-98.*) Walls are of brick, both solid and cavity construction. The floor is exposed concrete, while acoustic tile is used on the ceiling. Lighting consists of suspended incandescent reflectors, mounted on 5'-0" diameter rings surrounding columns.



The wing walls that extend out from the building provide space for outdoor shows, protected from the prevailing southeast breezes. The curved roof of the auditorium will be framed by a patented steel roof-structure system.



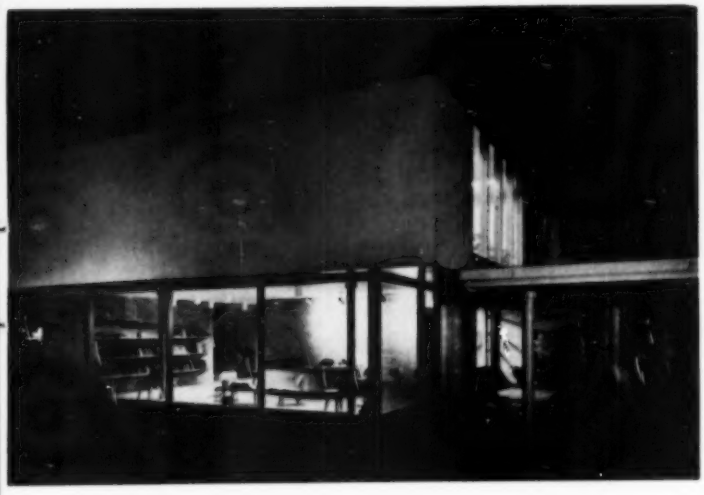
chamber of commerce

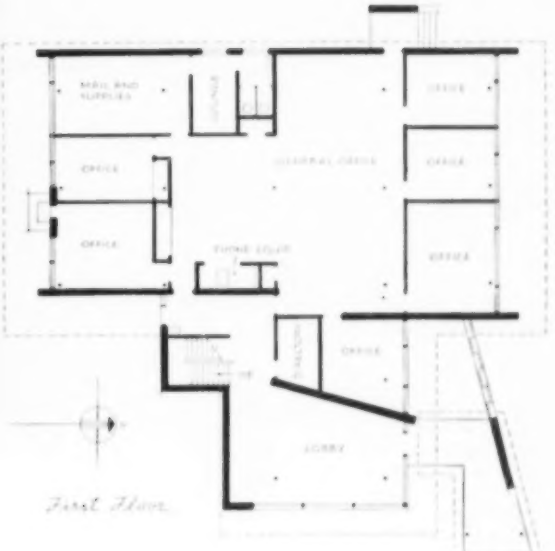
Twelve blocks north of the Civic Center, but still a part of the extensive Bayfront Development, the Chamber of Commerce Building is sited on land donated to the Chamber by the City. Like the Civic-Center group, it is located along the shoreline drive and is about the same distance from the downtown business center.

Requirements were more or less typical for this type of structure—offices for the manager and assistants; secretarial space; facilities for handling industrial and tourist promotion activities; a board room; a meeting room—and a tight budget. The solution is a two-story building, with board room and meeting room located on the upper floor.

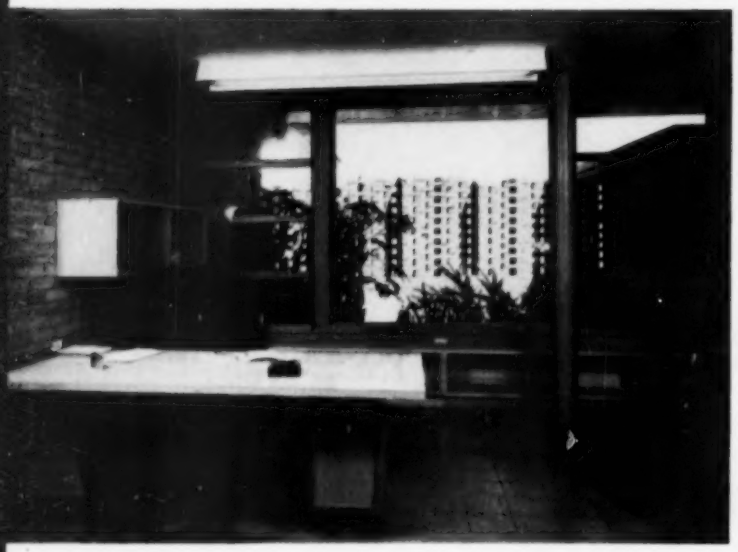
Window areas facing south are protected by fixed, vertical brises soleil, made of ¼" asbestos cement panels attached to wood frames spaced 2'-0" on centers. Like the Exhibition Hall in the Civic Center, the Chamber of Commerce Building utilizes the Youtz-Slick lift-slab method of construction, with flat concrete slabs mechanically lifted on pipe-column supports. Exterior walls are of brick and stucco; interior walls are either exposed brick or plywood. Flooring includes asphalt tile and cork tile; ceiling surfaces are of acoustic tile. The wood sash are awning type, with DSB glass or fixed frames holding plate glass. Both fluorescent and incandescent lighting fixtures are used, and the air-conditioned building has a gas-fired warm-air system for heating.

COOLING TOWER
BOARD ROOM
EQUIPMENT ROOM
COFFEE BAR
ROOF
MEETING ROOM
ROOF
Second Floor




MAIL AND SUPPLIES
OFFICE
GENERAL OFFICE
OFFICE
OFFICE
TYPING POOL
OFFICE
OFFICE
LOBBY
First Floor

civic buildings: chamber of commerce



The manager's office (above) *looks into a walled landscaped area adjoining the main entrance. An angled desk, built around one of the pipe columns, occurs in the second-floor board room* (above, right). *The north windows of the meeting room* (right) *command a view of the bayfront.*

construction

Foundation: concrete footings and slab; cement—Universal Atlas Cement Company. **Structure:** lift-slab construction system with steel-pipe columns. **Wall surfacing:** exterior: Mexican brick and stucco—Pittsburgh Plate Glass Company; interior: Mexican brick and plywood—U.S. Plywood Corporation; rest rooms, toilets: quarry tile—Summitville Tiles, Inc. **Floor surfacing:** asphalt and cork tile—Armstrong Cork Company; unglazed ceramic tile—Mosaic Tile Company. **Ceiling surfacing:** acoustic tile—Celotex Corporation. **Roof surfacing:** built-up asphalt and gravel—Barrett Division, Allied Chemical & Dye Corporation; clear waterproofing (silicone) on brick exterior—Wurdack Chemical Company. **Insulation:** glass-fiber batts in equipment room—Owens-Corning Fiberglass Corporation. **Partitions:** wood studs; marble stalls—Carthage Marble Corporation. **Windows:** wood awning-type sash—Gate City Sash & Door Company; DSB window glass and fixed plates, fixed-glass store fronts in wood frames, wire glass in metal (over stairs)—Libbey-Owens-Ford Glass Company. **Doors:** interior, hollow-core flush wood; entrance, solid-core flush wood—Mengel Company. **Hardware:** tubular, cast- and wrought-aluminum lock sets, painted surface-type door closers—Russell Erwin Division, American Hardware Company; primed and dull chrome-plated hinges—The Stanley Works. **Paint:** exterior: portland cement paint—General Paint & Varnish Company; interior: flat oil paint—Pittsburgh Plate Glass Company.

equipment

Lighting fixtures: slimline strips in wooden boxes—Sunbeam Lighting Company. **Electrical distribution:** service entrance switch, duct system, panelboards, multibreaker—Square D Company; wire and cable—Rome Cable Corporation; conduit—General Electric Company; wiring devices—Arrow-Hart Electric Company and Hegeman Electric Company. **Plumbing and sanitation:** water closets, tubs, and lavatories—Crane Company; toilet seat—Olsonite Plastics Division, Swedish Crucible Steel Company; gas-fired, monel water heater—Ruud Manufacturing Company; flush valves with vacuum breaker—Sloan Valve Company; chrome-plated brass accessories—Crane Company and Hall-Mack Company; cast-iron (waste and vent) and galvanized-wrought-iron (gas and water) pipes. **Heating:** combined heating and air conditioning; hot water boiler—Kewanee Boiler Corporation, Division of American Radiator and Standard Sanitary Corporation; natural gas; galvanized steel ducts; automatic controls—Minneapolis-Honeywell Regulator Company; gravity-type toilet vents—G. C. Breidert Company. **Air conditioning:** compression-type unit, direct-drive (self contained) compressor, blowers with two-speed motor, self-contained cooling coils—Carrier Corporation; Freon 12 refrigerant—E. I. du Pont de Nemours and Company; adjustable wall registers—Tuttle and Bailey, Inc.; cleanable and rechargeable filters—Research Products Corporation; forced draft cooling tower—The Marley Company, Inc.; controls with adjustable dampers—Minneapolis-Honeywell Regulator Company.

structural aspects of lift slab

by Fred E. Koebel*

Many articles have appeared in recent months extolling the architectural considerations, the cost benefits, and general adaptability of the Youtz-Slick Lift-Slab Method of Building Construction. However, few if any of these articles have discussed the structural aspects and considerations involved in the method. The purpose of this paper is to discuss in some detail these factors involved in the structural design of a lift-slab building.

As many engineers involved in the design of lift-slab structures have found, the analysis and design is similar in many respects to any other building design and analysis. The basic differences involved in the Youtz-Slick design pertain primarily to the column design and the collar design.

column design

Column design for lift-slab introduces an entirely new philosophy of column action to the design engineer. In this method slabs are poured one on top of the other and then the slabs are lifted into position by hydraulic jacks sitting on top of the column. Thus, when the first slab is being lifted the column has no restraint at the top and is fixed or built in at the bottom. The hydraulic jack is centered on the column at the top, thus applying a concentric loading to the column which is equal in magnitude to the dead load reaction of the slab being lifted. If the slenderness ratio of this column is computed, it will be found that the ratio is exceedingly large, thus making the analysis problem one of stability instead of inelastic action. It has been shown that for large slenderness ratios the Euler equation will give the critical load value which initiates buckling of the column. For that reason, Euler's equation with an appropriate factor of safety is used for the structure. In any standard text the Euler equation for pin-ended columns is defined as:

$$P=\frac{\pi^2 E I}{L^2}$$

where P=critical load value initiating buckling
E=modulus of elasticity of the material
I=moment of inertia of the section
L=free length of the column

With a column built in at the bottom and free at the top, it can be shown that L=2l, where l=free length of free standing column.

Thus, the initial equation for pin ended columns is reduced for this case to:

$$P=\frac{\pi^2 E I}{(2l)^2}=\frac{\pi^2 E I}{4(l)^2}$$

The problem for the design engineer then is the determination of an adequate safety factor. This safety factor is included because of eccentricities within the column section, impact at the initial stage of the lift, and the usual reasons for providing safety factors.

After lifting the roof slab and fixing it to the columns, the next slab is raised into position. This condition of loading is usually not as severe as the initial condition outlined above. The slenderness ratio of the column in this condition of loading is usually reduced substantially and for this reason is not critical.

The column strengths are checked during any succeeding lifts until all slabs are fixed in position. At that time the column is similar to any building column and it is checked by any of the empirical equations recommended in building codes. The usual equation used is a parabolic formula recommended by the American Institute of Steel Construction for axially loaded columns with values of $\frac{l}{r}$ less than 120.

$$\frac{P}{A}=17{,}000-.485\left(\frac{l}{r}\right)^2$$

where $\frac{P}{A}$=allowable axial stress
l=free length of column
r=radius of gyration of the section

Columns in general use in the method include pipe columns, H columns, and square columns formed of angles and plates. Concrete columns are also used successfully. It is highly desirable to obtain column sections that are symmetrical about both major axes. For that reason pipe columns and square columns are used more frequently.

collar design

The lifting collar, a cast-steel plate, serves a triple purpose in a lift slab. The collar is placed around the column and cast into the concrete slab. Openings are left in the collar to fasten the lifting rods and thus the slab is lifted through the collar. After the slab is raised to position shear connection plates are fastened from the column to the collar, thus supporting the slab. The third and perhaps most important function of the collar is its behavior as a column capital. The reaction of the slab on the column is distributed around the periphery of the collar instead of around the smaller periphery of the column.

The collar is a plate stiffened by gussets with holes provided for the column and lifting screws (*Figure 1*). In the analysis of a lift slab it is assumed that the stiffness of the collar is many times greater than the stiffness of the slab; hence, the collar is assumed to be rigid and nondeflecting. (Several tests have proven this assumption satisfactory.)

In choosing the size of the collar, two items should be carefully checked. First, the shear developed at the reaction is of prime concern. Secondly, the bearing stress between the collar and concrete as a result of the reaction must be kept within allowable limits. In ascertaining the magnitude of shear stress, since it has been assumed that the collar does not deflect, the equation $v=\frac{V}{bjd}$ can be used:

where V=reaction due to total load
b=the periphery around the collar (defined as the width of the collar plus twice the effective depth of the slab around the entire collar)=4(b+2d)
j=assumed as .875
d=distance from center of gravity of tensile reinforcing to the compression face of the slab.

The maximum allowable value of this shear stress is taken as .025f'c where f'c is the ultimate compressive strength of the concrete at 28 days. It can be seen that the value of shear stress developed will control in many instances the depth of slab and size of collar plate. It is also possible to provide a shear head composed of stirrups placed around the collar at the critical area to resist added shear. It is recommended that if this is done the maximum shear be held to .04f'c with the stirrups thus designed to take .015f'c.

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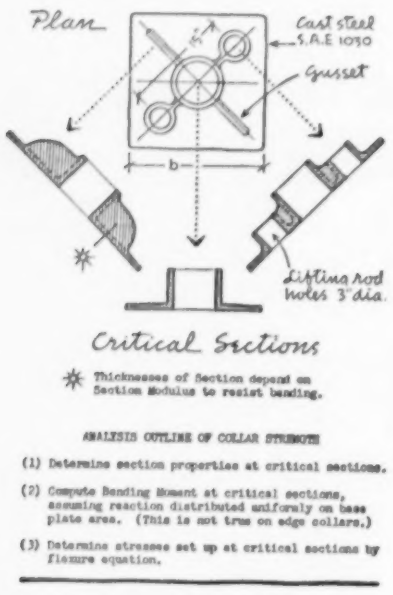

Plan
Cast steel S.A.E. 1030
Gusset
b
Lifting rod holes 3" dia.
Critical Sections
Thicknesses of Section depend on Section Modulus to resist bending.
ANALYSIS OUTLINE OF COLLAR STRENGTH
(1) Determine section properties at critical sections.
(2) Compute Bending Moment at critical sections, assuming reaction distributed uniformly on base plate area. (This is not true on edge collars.)
(3) Determine stresses set up at critical sections by flexure equation.

Figure 1—typical details of lifting collar.

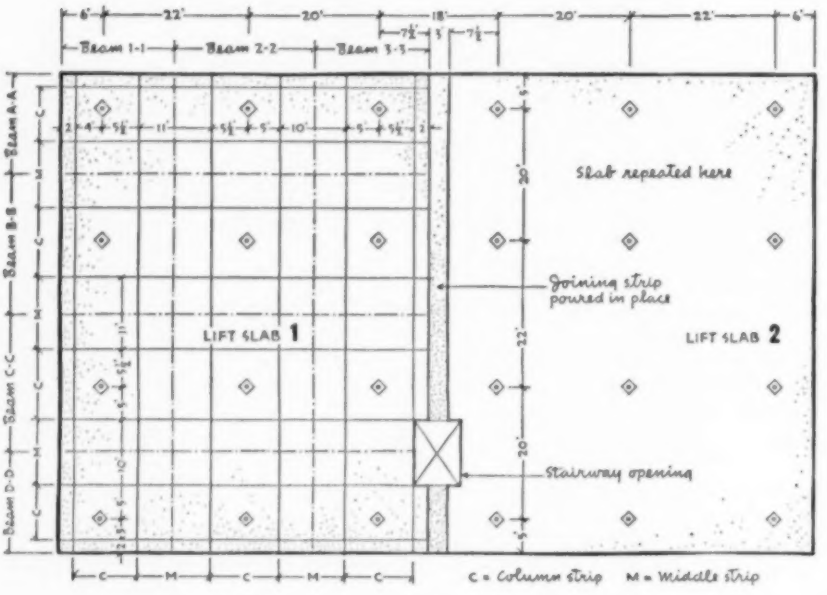


Figure 2—layout of beam, column, and middle strips for typical slab.

The collar sections are designed by evaluating the bending moments and stresses developed due to the reaction of the slab at the critical sections as shown (*Figure 1*). The added sections due to gussets may be included in the section properties.

The connecting plates used to fasten the slab to the column are designed to transmit the reaction at the slab into the column by shear only in one- and two-story construction. For multistory construction and buildings subjected to high lateral loads, other methods are used.

slab design

Slabs used in the method are designed according to the specifications for flat slabs set up in the American Concrete Institute Building Code. The thickness of the slab is determined so that shear stresses and compressive stresses at the critical sections do not exceed the allowable stresses for the concrete used. The minimum thickness of slab, however, is limited to $\frac{L}{36}$ where L is the length in inches of the largest span.

In general, it is highly desirable to plan lift slabs in lifts of 12 columns each. This decreases the number of joints between sections of slab and the total time spent in setting equipment. The most efficient span lengths in conventional flat plate are between 20 and 24 ft with the ratio of spans no more than 1.33. Recommended superimposed loads should not be more than 150 psf because of the deflection characteristics of the flat plate.

It has also been found highly desirable to provide cantilevers because of the corresponding reduction in positive moment in the interior spans and the uniform distribution of shear resulting at the column area. For these reasons cantilevered slabs are recommended. However, in the vast amount of construction already complete, there are many slabs with columns at the periphery of the slab. If the load-bearing walls are used, it is conceivable that the slab could be lifted with cantilevers and then the live load distributed with the effect of the load-bearing wall reaction included.

For the analysis of bending moments due to dead load and live load, the slab is divided into separate beams consisting of a row of columns and strips of slab bounded by the centerline of the slab on either side of the column row as shown (*Figure 2*). These beams are taken in the longitudinal and transverse directions of the building resulting in the two-way pattern for the reinforcing steel. If the slab is continuous the resulting beams may be analyzed by any method of indeterminate structural analysis—the more common being Moment Distribution, or Slope Deflection. The analysis for live load can be made directly if the load is definitely known. Live load is movable and can be placed in different panels. Critical moments should be analyzed with the live load placed in panels so that maximum critical moments are obtained.

After the maximum dead load and live load moments are obtained, they are divided into column strips and middle strips in each direction. A column strip is defined as two adjacent quarter panels on either side at the column centerline, while a middle strip is defined as a strip one-half the panel in width and symmetrical about the panel centerline. These moments are divided into column strips and middle strips in the percentages recommended in the A.C.I. Building Code. The area of steel required is then obtained and spacing and length of bars required determined in the usual manner.

The design of a lift slab is thus very similar to the design of any conventional flat slab. However, it should be pointed out that due to the fact that the dead load deflection characteristics of the slab are already present before the slab is fixed in position, certain unique conditions exist after the slab is fixed at the columns. If load bearing walls are used to support the cantilever span after lifting, and the deflection of the cantilever is not removed, the dead load will not react at the wall. The live load will react at the wall, however, and the resulting span must be provided with adequate steel to resist the result-

ing positive moment. If the deflection is removed from the cantilever, adequate steel must be provided to resist the resulting positive moment due to live load and dead load. The interior spans must also be adjusted for steel due to the change in end span support conditions.

Since lift slabs are broken into a maximum of 12 column lifts, and building slabs are often composed of many more columns, it is necessary to join the lifted slabs by some means. This can be done by forming a moment joint or a shear joint between the adjacent slab edges after the slabs are lifted and fixed on the columns. A moment joint is made between two sections of the slab that are lifted as cantilevers and hence have dead load deflection due to the cantilever action. If both cantilevers are the same length deflections are similar and a joint can be made which will be required to resist only live load moment in the now continuous span. Often, however, the cantilever spans which are to be joined are not the same length and the deflection of each span becomes different. In this case it is advisable to shore both spans up to the level of the slab at the column connection, and then pour the joint. Thus the joint and the entire span length must be reinforced for the effects of the now continuous span for both dead load and live load. Thus there is an increase in positive steel. However, the steel at the cantilever support supplied for lifting is now, in the final position, usually adequate for negative moment with dead load and live load.

When the slab is raised to its final position it is fixed to the column by means of shear plates welded to the column and to the exposed base of the lifting collar as shown (*Figure 3*). The length of the plates and corresponding amount of weld is determined by the amount of load transferred to the column and the allowable shear stress in a welded joint. These shear connections are usually plates placed on all four sides of a square or rectangular column or bent plates fitted to the curvature of a pipe column.

footings and foundations

The design of footings and foundations for a lift slab structure is similar in all respects to the design of footings and foundations in a conventional building. Many lift-slab buildings are designed with curtain or nonload bearing walls. This means that the entire dead load and live load is taken by the columns and must therefore be transferred directly to the ground by the footing. Thus footings often become large and their design of major importance.

The first step in the design of the footing is to determine the condition, type, and bearing capacity of the soil beneath the footing and in surrounding areas. This determination is important and should be done thoroughly. After the bearing capacity of the soil is known, the size, the steel areas required, and the thickness of footing can be determined. If the footing is deep, the load can be transferred from the column to the footing by means of a pedestal. Usually lift-slab construction is done with steel columns. In order to transfer stress from the steel columns to the concrete footing, a steel bearing plate is welded to the column base and the plate is fastened to the footing or pedestal by anchor bolts embedded in the concrete. In order to plumb columns, bolts are placed under the bearing plate and are used for ease in aligning. After the column is straight this area is grouted in with a fast-setting, high-early strength grout (*Figure 3*).

It is highly imperative that full fixity be obtained at this joint because of the critical condition of the column during the initial lift.

The joint between concrete columns and footings are identical with usual design criteria.

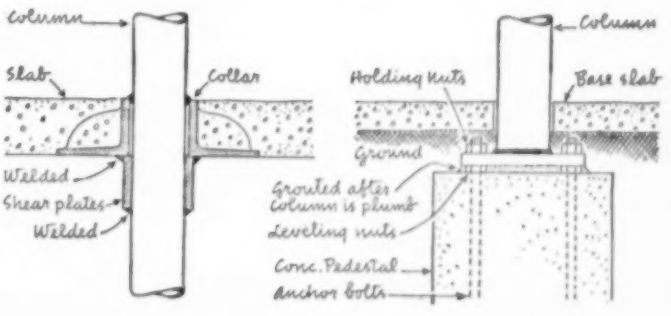
In some areas of the country it is necessary to interconnect the footings. This is also done in the usual manner.

The over-all importance in foundation work cannot be overemphasized. This is not only true in Youtz-Slick construction, but in any construction. Adequate provisions should be made for complete subsoil investigation. In lift-slab, where the entire load of the structure is usually taken by isolated footings, the importance cannot be overemphasized.

multistory and rigid frame analysis

The Youtz-Slick Method of Building Construction is not limited by any considerations to one- or two-story construction. It is entirely possible that 10 stories could be lifted and still be structurally sound and economical. The proposed lifting plan for a six-story office building is indicated by straight line diagrams (*Figure 4*). The columns are on 18-ft centers and the slab is 6½ in. Of prime concern, of course, is the stability of the columns when the total length of column from roof top to footing is 54 ft. It was found that a column formed from two angles into a box shape with a nominal 8 in. by 8 in. section was adequate in the final loaded condition. It was felt that a section larger than that would become uneconomical in the final overall cost picture. When lifting loads were analyzed, it was found that it would be impossible to lift the roof slab the entire 54 ft and fix it. However, after a few trials it was found that it would be possible to lift from approximately 29 ft and pin three slabs and hold them there while lifting and fixing the first three floors as indicated (*Figure 4*). The columns are braced adequately at the 29 ft point before lifting starts. In this instance with the column braced, the initial lift is carried out with one end fixed and the other end pinned. There is restraint against translation provided by the bracing. The roof slab is lifted and pinned to the column. This can be done by actually pinning through the column, or by welding seats on the column and sitting the slab on these seats. The same steps are followed with the fifth floor and the fourth floor. When the third floor is raised to position it is welded into position. The second and first floors are handled in the same manner as the third floor. When the first floor is complete, the lifting jack is removed and the remaining height of a column is spliced to the existing section. This splice should occur at a point on the column between one-quarter and one-half of the finished floor-to-floor height of column. After splicing, the remaining slabs are lifted and fixed in place in reverse order: roof, fifth floor, and fourth floor.

Figure 3—typical details for Youtz-Slick design.



COLUMN and COLLAR CONNECTION FOOTING CONNECTION

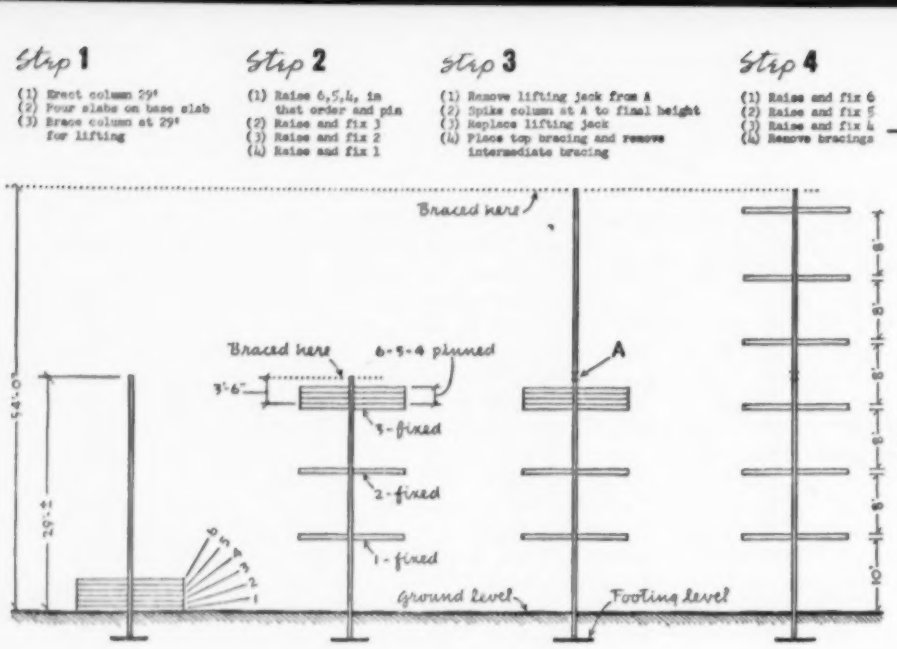


Figure 4—lift procedure for a six-story building.

During lifting, certain precautions should be taken; adequate provision against wind acting on the exposed slab edges should be maintained, particularly when the upper slabs are pinned. Adequate bracing during the initial lift should exist so that buckling does not occur at any time. It is necessary to check column strengths for all conditions of loading, including the final loaded condition.

The rigidity of multistory building is of prime importance. The wind load and the resisting stresses should be calculated for the finished building as well as during erection. The actual analysis for wind stresses is solved differently for every building because of building codes, height of building, and the width and length of building. However, certain fundamental investigations should be made. These investigations would, of course, be more critical across the short direction of the building where the wind forces are offered the large exposed surface area of the long dimension. The prime concern is the connection made between columns and footings. The bolts and welded connections should be of sufficient strength to take the added horizontal thrusts due to wind. When the building resists wind pressure it acts similar to a cantilevered truss and, of course, is held in position by the vertical load and the connections at the base. Generally, there is no danger of the building overturning, but racking of the geometrical frame must be carefully checked. The racking tendency is resisted by the stiffness of the columns, and slabs acting as a bent; hence an adequately rigid joint must be provided at the column-slab connection. This is done by welding the collar directly to the column on top and bottom, as well as the shear connector provided, as mentioned previously. In order to insure even greater rigidity, it is suggested that the reinforcing in the slab be welded to the collar wherever practical. Racking tendencies due to horizontal load can also be aided by shear walls constructed in the direction of the short dimension of the building. Partitions and exterior walls also aid in the reduction of racking; however, this resistance is variable and should not be counted on too heavily. The horizontal displacement of one story relative to the next should be considered and the columns checked to insure that they are capable of resisting this displacement.

The Youtz-Slick Lift-Slab Method is applicable to multistory construction; certain elementary precautions must be taken, of course, but the method lends itself admirably.

analysis of a typical two-story building

A two-story building erected by the Youtz-Slick Method will be analyzed in some detail. The floor-to-ceiling height of the first story is 9 ft and the floor-to-ceiling height of the second story is 8 ft 6 in. Flat-slab design will be utilized and walls are nonload bearing. The over-all dimensions of the building are 113 ft by 75 ft; column spacings are shown (*Figure 2*). The slab marked LIFT SLAB I (*Figure 2*) will be analyzed.

Design data:

Concrete—3,750 psi @ 28 days, unit weight 150 lb per cu ft

Steel —reinforcing bars, A.S.T.M. A-305-49
—collar steel-cast steel, S.A.E.-1030

Live load
—roof ..... 20 lb/ft²
3-ply tar & gravel.....5½ lb/ft²
—floor ..... 50 lb/ft²

Depth of slab
From A.C.I. Code.....$L = \frac{22 \times 12}{36} = 7\frac{1}{3}$ or $7\frac{1}{2}$ in.
(This value will be checked for shear and compression.)

Design procedure:

Column design:

Column height

9′ 0″	1st floor to ceiling height
8′ 6″	2nd floor to ceiling height
1′ 2½″	thickness of roof and floor slab
2″	height above final roof elevation for jack seat
3″	distance below ground-floor elevation to top of pedestal
19′ 6½″	

Maximum column dead load for lifting

Column B-2 or C-2 (*Figure 2*)

Contributing area 21′ x 21′ = 441 ft²

Dead load $= \frac{7.5 \times 150}{12} = 93.7$ lb/ft²

Total load on column = 441 x 93.7 = 41,400
plus 5% initial impact = 2,070
43,470

∴ Total load for lifting initial slab is 43,470 lb.

Column section:

Assume 5-in. standard pipe column @ 14.62 lb/ft

$I = 15.16$ in.^{4}

$A = 4.3$ in.^{2}

$r = 1.88$

$l = 19' 6\frac{1}{2}'' = 234.5$ in.

$\frac{l}{r} = \frac{234.5 \times 2}{1.88} = 250$

Since the $\frac{l}{r}$ ratio taken as a free-standing column is high, the Euler equation for this column condition is used to determine the adequacy of the column section assumed:

$$P\ (\text{critical}) = \frac{\pi^2 E I}{(21)^2} = \frac{\pi^2 \times 29 \times 10^6 \times 15.16}{4(234.5)(234.5)} = 19{,}600 \text{ lb}$$

This section is obviously unsatisfactory because the critical buckling load is indicated to be 19,600 and the lifted load is 43,700 lb.

Assume 8-in. standard pipe column @ 24.7 lb/ft

$I = 63.35$ in.^{4}

$A = 7.265$ in.^{2}

$r = 2.95$

$l = 19' 6\frac{1}{2}'' = 234.5$ in.

$\frac{l}{r} = \frac{234.5 \times 2}{2.95} = 159$

Thus

$$P\ (\text{critical}) = \frac{\pi^2 \times 29 \times 10^6 \times 63.35}{4(234.5)(234.5)} = 83{,}500 \text{ lb}$$

Thus, the critical buckling load on this section is 83,500 lb. A factor of safety against buckling of $\frac{83{,}500}{43{,}470} = 1.88$ exists, since the height of lift is small and wind thrusts on the slab edge is low, this section will be used.

The anchoring of the column to the footing is shown (*Figure 3*). The bolts and weld are designed according to conventional methods. The column should then be checked in the final loaded condition:

Load. .roof	—dead load	41,400
	live load	11,050
2nd floor	—dead load	41,400
	live load	22,100
		115,950 lb

Length of free span = 116 in.

$\frac{l}{r} = \frac{116}{2.95} = 39.4$

$\frac{P}{A} = 17{,}000 - .485 \frac{(116)^2}{(2.95)^2}$

$\frac{P}{A} = 16{,}230$ psi allowable

$\frac{P}{A} = \frac{115{,}950}{7.265} = 16{,}000$ psi actual

Thus, this section is satisfactory in the final loaded condition.

Shear analysis at the collar:

Allowable shear $= .025\ f'c = 93.5$ psi

Maximum reaction at second floor $= 63{,}500$

Effective depth of slab $= 7\frac{1}{2} - 1\frac{1}{2} = 6''$

Assume 20" x 20" square collar

Thus $v = \frac{V}{bjd}$ $V = 63{,}500$

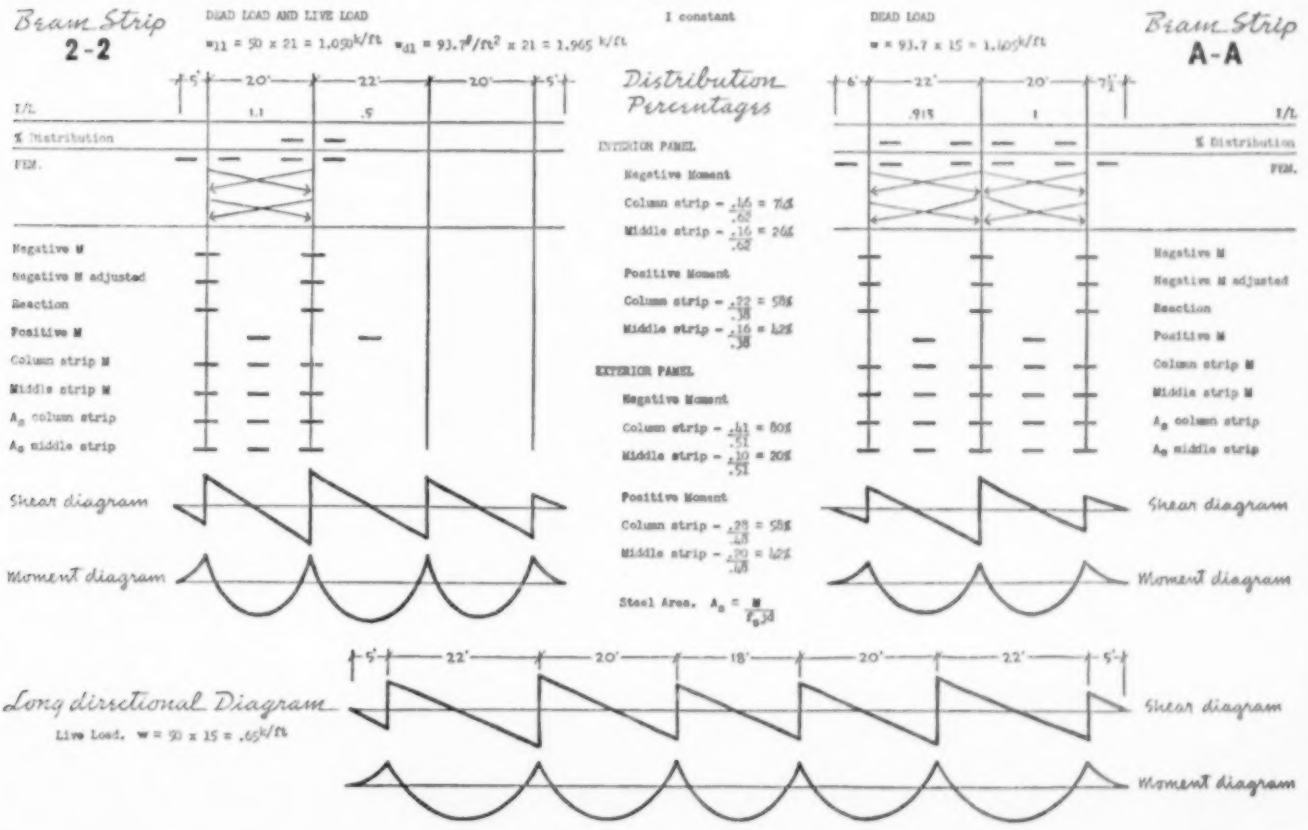
$b = 4(20 + 2(6)) = 128''$

$j = .875$

$d = 6''$

$v = \frac{63{,}500}{128 \times 6 \times .875} = 94$ psi

Figure 5—design sheet.



Thus, a collar with a base plate 20 in. by 20 in. will be used. If a concrete with less strength was used it would be necessary to increase plate size or increase the depth of slab. It would also be possible to design stirrups to take the added shear if it was so desired.

design of the reinforcing steel

As outlined in the general discussion of flat slabs, the slab is divided into individual two-way interlocking beam strips as shown (*Figure 2*). In this slab, beam 2-2 at the internal section of the slab will be analyzed along with beam A-A, an exterior beam strip.

The various loading conditions analyzed using Moment Distribution and taking full account of symmetry are indicated (*Figure 5*). As shown, the conditions analyzed include investigation of dead load, and following the provisions of the A.C.I. Building Code, the live load condition with all panels loaded simultaneously. No account is made in this analysis for the added stiffness contributed by the lifting collar at the supports; however, many designers may take this stiffness into account. The critical section for positive moments is taken at the center of the spans; the critical sections for the negative moments is taken at the column line with a reduction in negative moment allowed, based on a critical section at the center of gravity of the lifting collar.

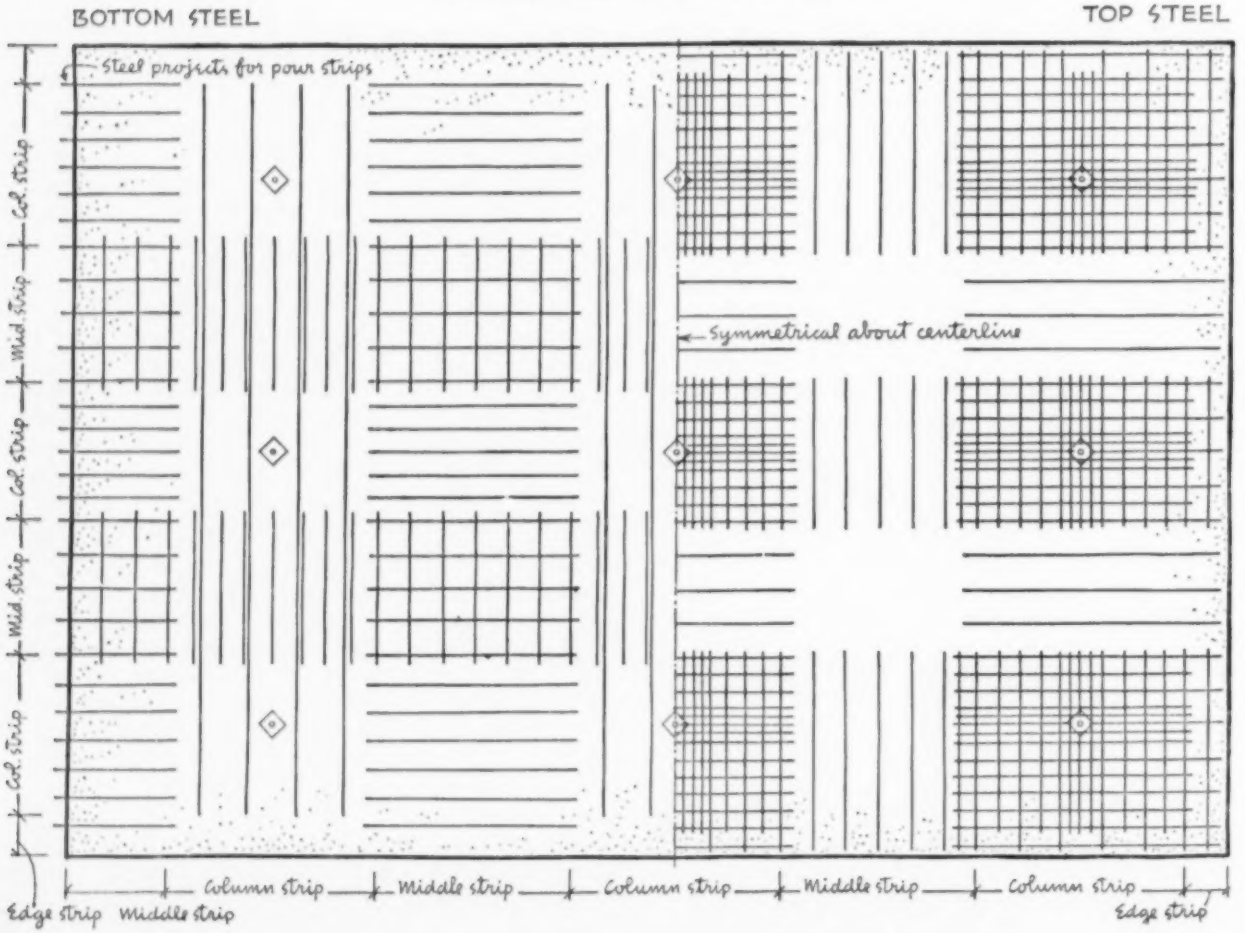
After the critical moments are obtained, they are divided by percentages of total moment into column strips and middle strips according to the ratio of specified coefficients in the A.C.I. Building Code. The areas of steel are then obtained and divided into the reinforcing bars required. It should be pointed out that the slab is designed as a complete unit in the long direction for the live-load condition. This is due to the fact that the two lift-slabs are joined by a moment joint, and the resulting continuous span must include steel to resist positive live-load moment at this point. Steel in the column strip in line with the collar is carried continuously across the collar.

The compressive stress and the bond stress developed in the concrete is then determined. It is realized that neither of these values obtained are true values because no provision has been made for the biaxial bending condition that actually exists.

Openings in the slab may be provided if provision is made for the total positive and negative moments in that panel. It is suggested that openings should not be cut in the slab in the immediate area of the column.

The remaining design of the structure is then completed and a Youtz-Slick building is completely designed.

Figure 6—typical slab-steel layout for lift slab.



The Architect and Public Relations: 5 local publicity

By Asher B. Etkes and Raymond Dodd

Making newspaper friends and influencing editors is of basic importance to the architect seeking local or national recognition. On it depends the success of his publicity or public relations campaign.

To the uninitiated (and this includes most architects) the newspaper office is an awesome never-never land peopled with characters from Grade-B movies. On better acquaintance, the newspaper office is revealed as a hard-working shop staffed by industrious individuals whose only deviation from the norm is a bright talent in recognizing and presenting news.

Approaching them with a story that offers no real news can be a cardinal sin if you're involved in creating publicity. They can spot self-aggrandizement at forty paces—a kiss of death, publicitywise, for the local offender. Never compromise for anything less than honest news, when you call up or visit an editor and announce, "I have a story."

newspapers
radio
television

What constitutes news has been described in a previous article as an incident which excites conversation or is of special interest to either the general public or a special segment of it. A newspaper audience, made up of readers in a specific area, favors news about happenings within the community — things with which these readers have an affinity. Simply, the appeal of a good local story is familiarity.

Hence a building project in the community has definite news value. But whether you, the architect, become the focal point of interest depends largely on the type of project.

If it is a multimillion-dollar commercial building or housing project of conventional design and construction, the newspapers will be more interested in its size and cost than in your creative role. On the other hand, if the project offers excellent evidence of imaginative design, novel arrangement and radical use of materials, the editorial spotlight is more apt to fall on the planner; if you help guide it.

Newspaper readers will want to read how and why you designed the project; first, because the job is a good one; second, because you are one of their neighbors. Your fellow citizens show a sense of personal pride in the outstanding accomplishments of their neighbors, especially if those talents win national recognition.

Hence, the scope of a local publicity program is not limited necessarily to projects within the community itself. An award in a national competition, the appearance of your work in an important magazine or a commission for a prominent project other than in the community, are of definite interest to local newspapers. The real story interest is in you, the local boy who made good, rather than in the award of project.

Just to stress this point. An all-glass house of striking design built in Los Angeles will, of course, rate a picture and some modest space in Buffalo, N. Y.; but if you, the designer, live in Buffalo the story may swell to half a page or more. It's you that make it news.

Although newspapers devote considerable space to building—commercial, civic, or domestic—appallingly little is allotted to the architects who do the designing. Making news editors aware of the real role of the architect or apprising them of the interesting reasoning behind the planning of noteworthy projects is the first big effort in changing this picture.

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When you have a good story, whom do you approach on a newspaper and how? One thing for certain; don't use a social blackjack. You may be well acquainted with the business or advertising manager, even the publisher, but usually it's not smart to plant any story through them. Editorial staffs dislike throne-room orders insofar as news is concerned and that dislike can spread all over you and your present and future activities. It's wiser to make your approach through the right door and take pot luck.

Learning a few basic facts about how a newspaper operates will be helpful in finding that right door and the right person. Generally, the make-up of an editorial staff is similar on most daily newspapers; the size of the staff varies with the paper's size and circulation. A few editors may even double in brass.

On the average newspaper, the hard core of activity is the city editor. Generally he is the final arbiter of what local news—crime, politics, education, society, or real estate—reaches the pages you read. While he is an invaluable contact, frequently he is difficult to cultivate because of the high-pressure demands of his post.

Under his supervision are the departmental editors responsible for gathering news in fields in which you may be a potential story. They include the real estate editor, the school editor, and the feature editor—the last often in charge of woman's page stories.

From the standpoint of acquaintanceship, they're more accessible than the city editor and also more inclined to lend a helping hand to develop your story if it has news possibilities. Get to know them.

It's not difficult. For instance, if you have designed a house you consider unusual in appearance or arrangement, just pick up the phone, ask for the real estate editor and describe the project. He's anxious for news in his assigned field, so you can be sure he'll listen. If he likes what he hears, he may take details over the phone and request illustrations or he may arrange an interview with you in person. You can make this same approach by personal visit or letter but the telephone, the newsman's handiest tool, is adequate and faster.

The feature editor is your target if your house provides that certain something that connotes a "story twist." Feature stories are difficult to define but, say, you have

designed a home with novel kitchen arrangement to accommodate a large number of new and novel labor-saving devices to cut housework to zero. The appeal here will be to housewives in general. Clever planning for a full basement workshop which can be converted in seconds into an attractive playroom will provoke male reader interest.

In the matter of selling a story to an editor, don't press too hard; newspapermen are allergic to blatant aggressiveness. Just marshal your facts, skim off the cream of the most interesting and report your potential story briefly. If the editor is interested, he'll ask for more details—plenty more.

As a matter of fact the demands of being the center of a story can be downright exacting particularly if the news you've created is important or "hot." Be prepared to answer a barrage of questions, cope with seemingly impossible demands of news cameramen. Never lose patience. Remember you turned it all on, that the newsmen are asking endless questions not to be exasperating but to whip together a good story—one in which you are the focal point.

Your personal association with newspapermen is the key to the success of your publicity endeavors. Be understanding, agreeable, and hospitable and you'll have won friends. Be patronizing to a reporter who fails to grasp an abstract point immediately or impatient with a cameraman who requests "just one more shot," and you can wind up a dead duck publicity-wise.

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The popular press party or organized conference offers another means of "breaking a story" and making personal contacts with members of the press. Few architects, however, have a valid excuse to sponsor one except to announce a new house design with an "open house" press meeting. Even here the architect is at a disadvantage unless he obtains full permission of the client to publicize the property. And if the client is an industrialist with a new factory, it's much more likely he'll be the host than the architect.

If circumstances are right to conduct a press party—or share the limelight in one—here are a few basic rules:

Don't play favorites. Invite *all* interested editors, give each the same news break, don't hold out an exclusive story angle for a favored newsman. Break the rules and your press party days are over.

Issue invitations early enough to assure a good audience; newspapers are run on rigid assignment schedules. Nail down all party details—food, drinks, and tips as well as press releases before raising the curtain. Loose ends can upset your guests as well as time schedule.

Save distribution of press stories and pictures until later if you plan a luncheon or supper. The newsmen are your guests and serving publicity along with the entree is poor hospitality with aggressiveness showing through.

Don't let one profitable venture endow you with heady success. Refrain from planning a return engagement until a decent interval of time has elapsed—and then only if your story has real news value. Editorial space in a newspaper must be earned; submitting anything less than your best may win you the ignoble tag of "publicity hound" —a term which is synonymous with "unwelcome."

•

While the newspaper is the keystone of your publicity program on a local level, don't overlook another important medium—radio. If your area offers television, it provides still another string to your bow.

At first glance there seems little in the architectural field that would fit the formats of either radio or television but study carefully the program listings of your local stations—with special attention to the daytime show.

There are a vast number of shows—interviews, round tables and how-to-do sessions—aimed at women listeners and covering a variety of subjects. If you specialize in home design or in school construction, being heard or seen by this distaff audience is of major importance; its members influence decisions.

Getting before a mike or a television camera requires the same ingredient required by a newspaper editor: a good story angle.

As an architect, you're an expert in your field and hence good interview material. You are equipped to talk about houses—a subject dear to the hearts of housewife listeners. You can discuss design and arrangement for beauty and labor saving; the use of low-maintenance materials, proper color combinations, and the latest style trends in dwellings. There is a wealth of subjects at your fingertips.

If school design is your forte, your opinions on classroom arrangement, corridor traffic flow, window arrangement for the ultimate in seeing conditions, and the evolution of today's functional school are suggested for the forum or public service type of programs.

The architect is in a good spot to obtain interesting devices or contrive them: home models with removable roofs, a variety of façades, wings and outbuildings to demonstrate remodeling possibilities or architectural styles. Program directors will like them and so will audiences.

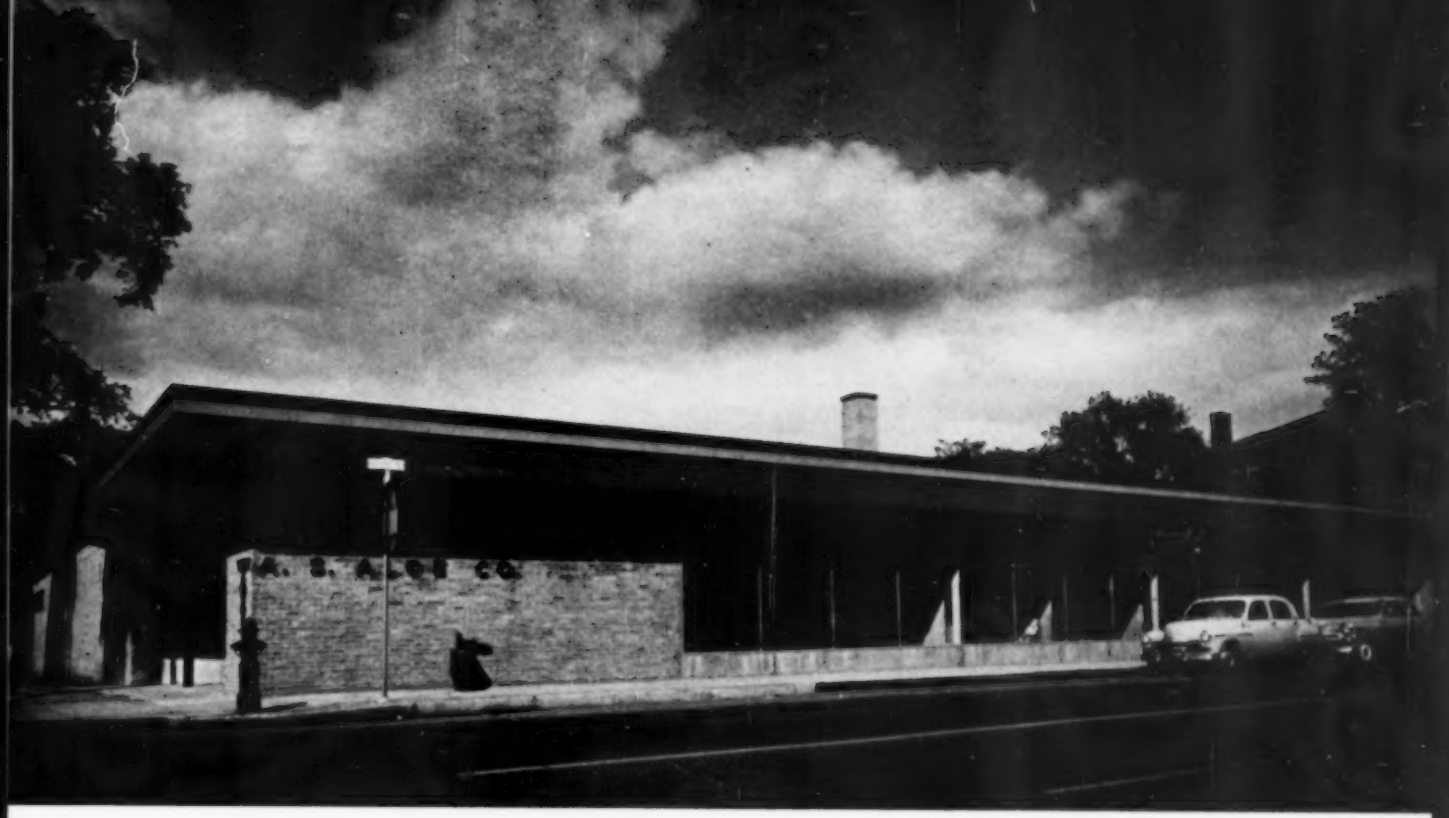
This brings us to the $64 question: How do you get on the air? In some instances it is difficult, frequently it's comparatively simple. Some program directors may welcome your material; others may be difficult to convince. There is no standard answer because of a wide variety of situations—time, sponsors, and personalities.

One thing for certain, it is more advisable to offer your services through a third person. Attempting to "sell" yourself, to convince a radio or television program director that your talents are just what his audience is waiting for, is difficult—not to mention embarrassing. Broadcasters are as suspicious of self-aggrandizement as newspaper editors.

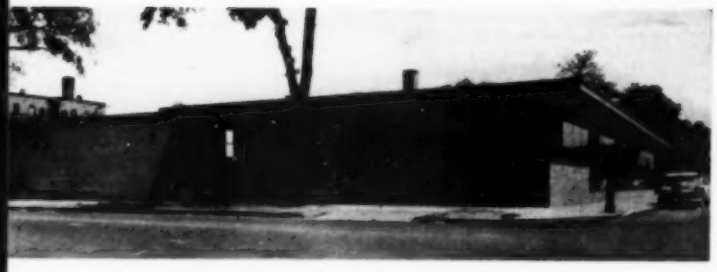
That third person might be several people—a friendly editor with valuable radio contacts, a program sponsor, or your own public relations counsel. Also it could be your next-door neighbor or a fellow club member.

Like newspaper editors, broadcasters need daily material, will listen politely to almost anyone who can help fill their needs. And similarly they demand newsworthy material with a wide appeal.

Exactly what type of material any program director wants can be determined with the flick of the wrist. Turn on your set and listen or look; it's a surefire method of finding out.



office building-warehouse



location	Minneapolis, Minnesota
architects	Thorshov & Cerny, Inc.
architect-in-charge	Newton E. Griffith
engineers	Ralph D. Thomas and Associates, Inc.
general contractor	The Standard Construction Company

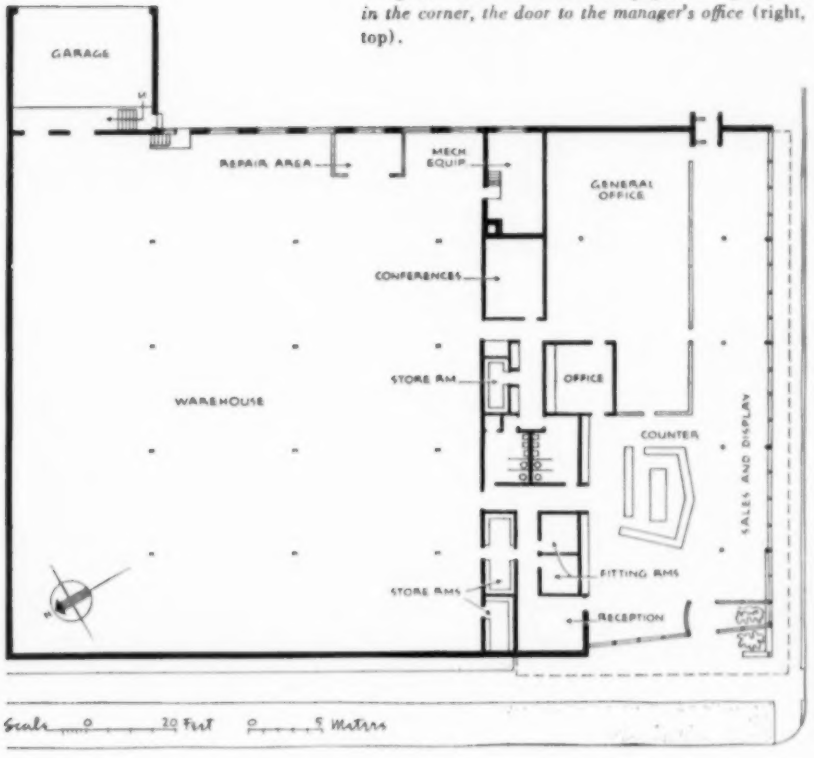
The Minneapolis branch of the A. S. Aloe Co., well-known medical and hospital supply house, is located at the northeast corner of a busy intersection, convenient to numerous hospitals and on the fringe of the city's business district. Basic elements are a warehouse, an orthopedic suite, office space, and a windowed display room extending the full length of the south front (top). *East of the building is ample, off-street parking and a loading dock serving the warehouse. Seen from the west* (above), *the windowless wall of the warehouse is at left; main entrance, at right. Chief exterior colors are the warm brick; metal roof fascia painted warm orange-rose, with snap line of black; and aluminum trim. Lettering and trademark are deep terra cotta.*

Photos: Allen Downs

An unusual requirement in design of the display room (INTERIOR DESIGN DATA, *page 136*) was for a series of model rooms, in addition to attractive display backgrounds, for the varied items of interest to doctors, dentists, surgeons, hospital administrators, etc. This was accomplished by low partitions at right angles to the window wall, that still permit an unhindered view of the remainder of the room. Above the projecting display island and the clerical office space, a dropped ceiling contains accent spotlights as well as indirect cove lighting; over the office area, additional lighting is provided by recessed fluorescent fixtures. Interior colors use the company scheme—gray, yellow, and blue, plus accents of red. Natural-oak display cabinets have blue linoleum, gray-plastic laminate, or glass tops; wall cases are lined with blue velvet.

Structurally, the architects point out, "there is nothing unusual"—a simple system of steel beams, columns, bar joists, and steel deck, "chosen for economy and ease of erection." Walls are of brick, finished inside with plaster. Concrete block is also used, and interior partitions are of hollow tile, plastered. The flooring is asphalt tile; ceiling surfaces are plain or acoustic plaster. Sash in general are commercial projected steel, though frames of fixed windows and the entrance door are aluminum. The building is heated by steam, served by an oil-fired boiler, with continuous fin tube in office-display area.

The large photo (acrosspage) *looks east through the display room* (clerical area in background, left) *and out through rear door to parking lot. A more distant view* (right, below) *shows the projecting island display and contour of dropped ceiling. Looking along the north wall* (bottom page) *one glimpses, in the corner, the door to the manager's office* (right, top).



Highlander Folk Architecture . . .

The Highlander Folk School was founded in 1932 by a group of Southerners led by Myles Horton, the school's present head, a Tennessean who had trained for the ministry. Inspired by Danish folk schools where Horton had studied, the school was launched "to assist in the defense and expansion of political and economic democracy." Working chiefly with underprivileged groups, especially with farmers and laborers, it has encouraged industrial unions and invited representatives of the organizations to come to the school for sessions ranging from a week to a month.

Purpose of these seminars has been to discuss common problems, improve organizational setups, and to train southern rural and industrial leaders for participation in a democratic society. A basic tenet has been to combat intolerance and to promote better understanding between rural and urban people and between members of all races, creeds, and, complexions. To accomplish these ends, in addition to the resident classes, staff members have frequently gone to communities where their help was needed on such matters, and the school functions locally as a rural settlement house, providing social, educational, and recreational services for all. In this latter category are the library and nursery school-community center buildings shown here. The buildings were designed by Carl Koch, Boston architect, and constructed by unskilled workers, both neighbors and those attending school sessions.

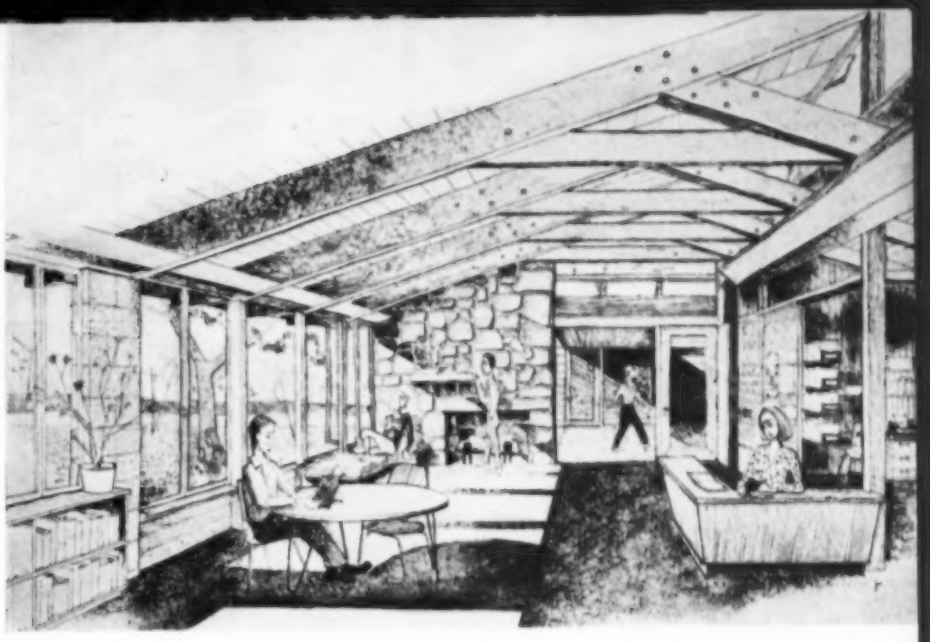
In the case of the library shown on the facing page, the architect reports that a fairly complete set of preliminary drawings were made and an interim perspective was sent to the school. "We received no further instruction to prepare working drawings," he reports, "and the next word we had was that the building was completed the following summer, using the preliminary drawings we prepared." Supervision was performed by a wise but untrained native.

The program was simply to provide an economical structure with a reading room, lobby, desk room, and work space. The design approach centered around developing as simple a structure as possible, using materials immediately available. The structural system consists of bolted wood beams placed 6 ft o.c. and bearing on wood columns; a plank roof spans across the planking. Local stone, concrete block, and native lumber are the materials. Leon Lipshutz was associated on the design.

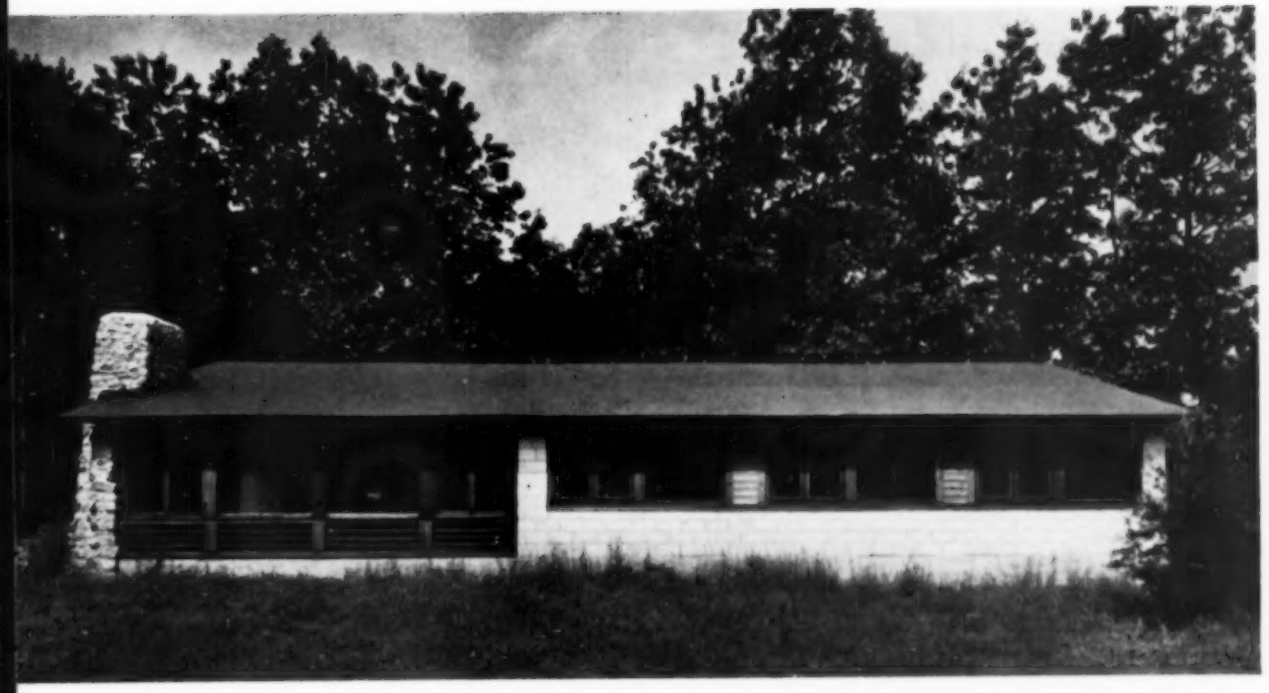
. . . a design experiment at an experimental school

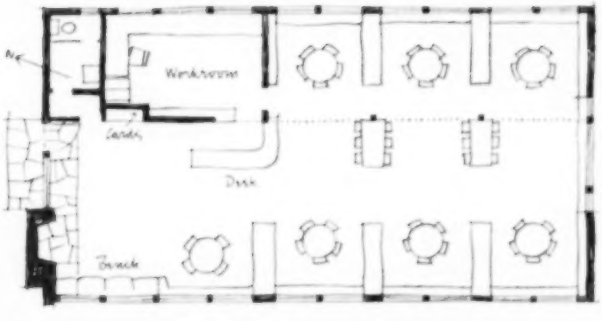
The school site is a rolling, sparsely wooded meadow, located on a plateau in the Cumberland Mountains, northwest of Chattanooga. The architect has prepared a complete campus plan that includes a classroom building joined to the library; an administration-recreation building, and a dormitory.

Photos: Emil Willimetz



the library



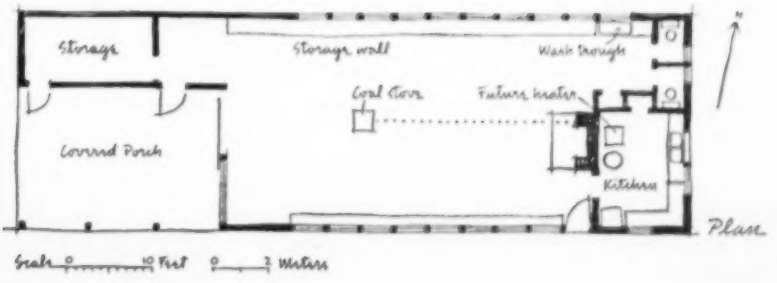


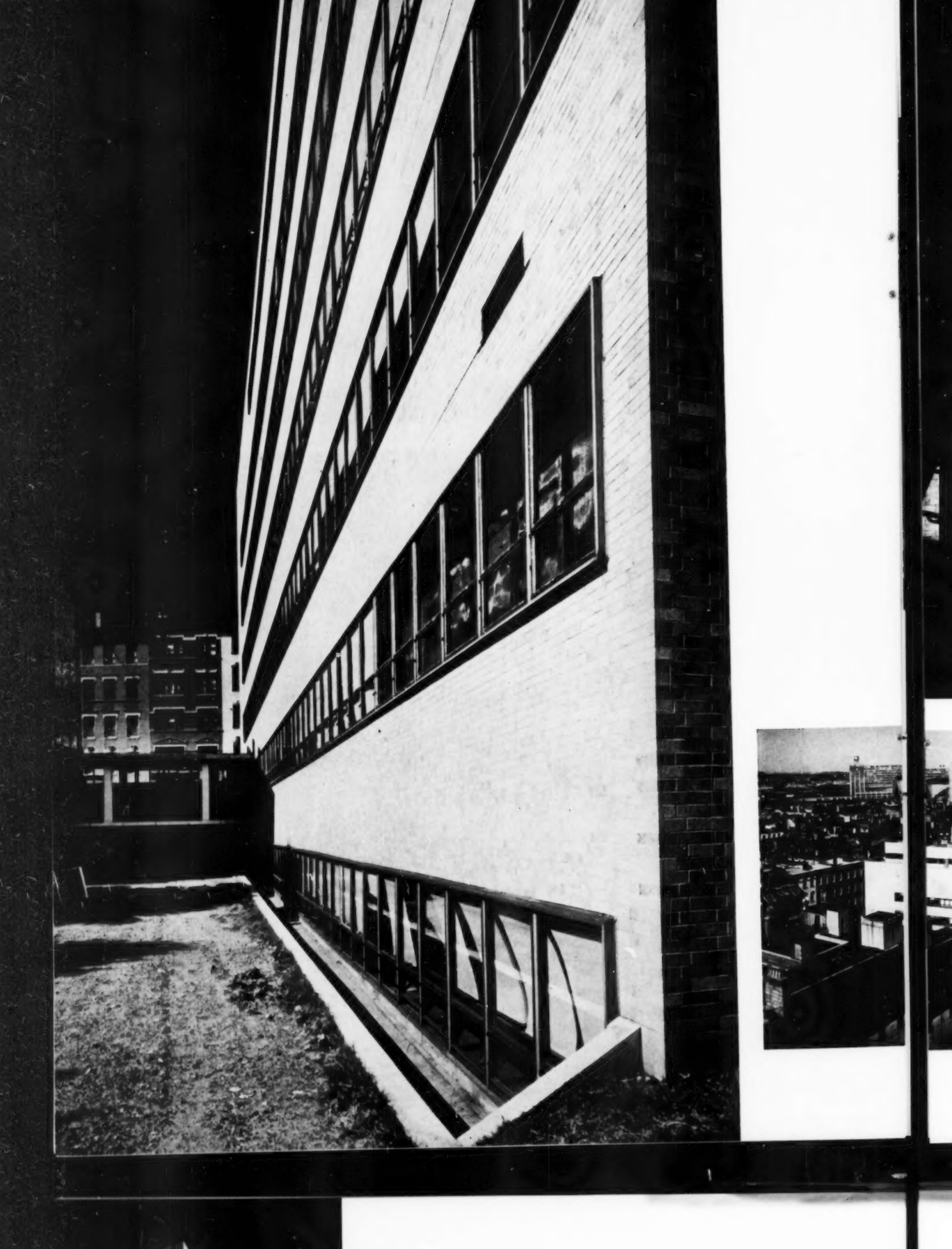
Plan Scale 0 ..... 10 Feet 0 ... 3 Meters

the nursery school

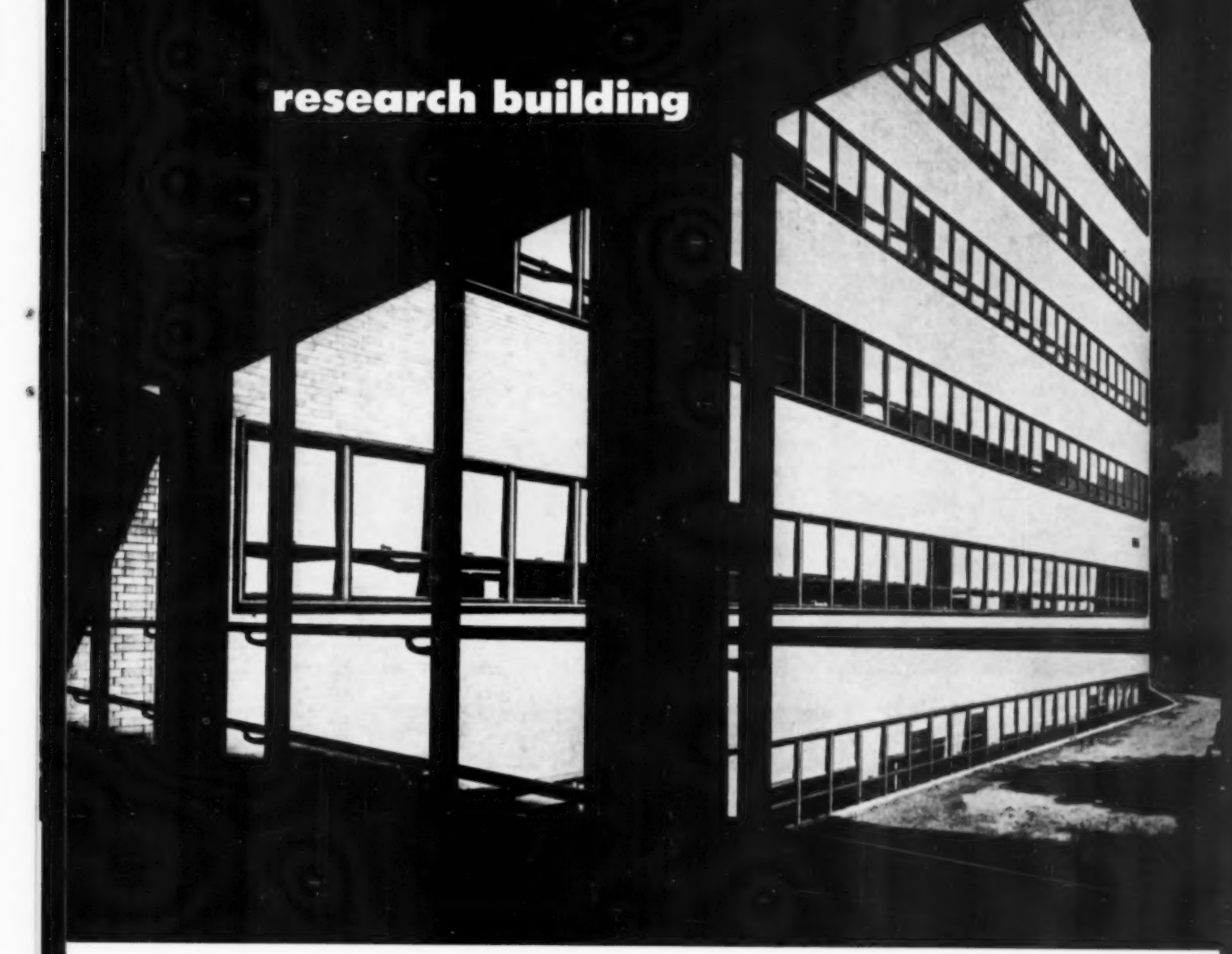
The building on these two pages is a multipurpose structure—a nursery school during the day and an adult-education and community social building (both local and student) at night. "The simplest conceivable structure" was the architect's goal—a building that could be built by summer students under supervision of a local carpenter-mason. Construction is similar to that of the library, though here trusses of light, stock wood members, 4 ft o.c., span the width and dictate the basic module. The big south windows are fixed, with ventilation through louvers below.

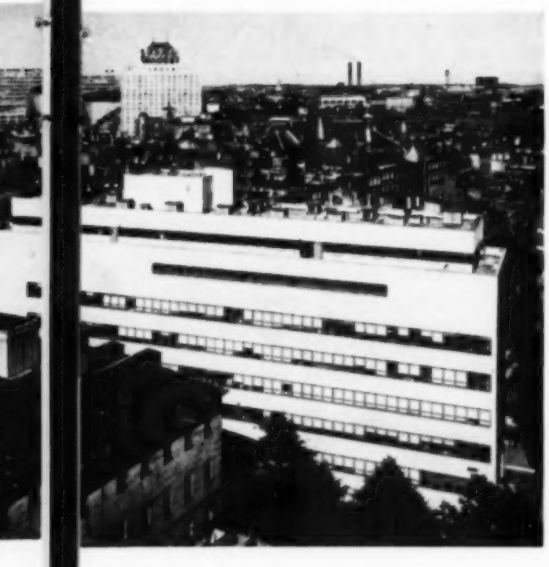
Choice of finishes, equipment, and accessories was left to the owner's decision. The building is in a flat, wooded area on the border of the campus that allows neighboring mountain families to reach the building without entering the school grounds; yet it is readily accessible for school use also. The heating system consists of a pot-bellied coal stove and a fireplace.





research building





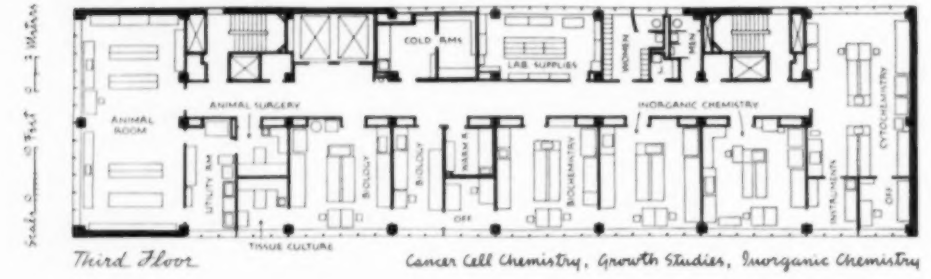
This newest building at the Massachusetts General Hospital is linked by a corridor to the oldest—the 1821 Bulfinch Building (foreground, photo at left). *Planned to house all of the hospital's extensive laboratory research, the major portion of the space is built on a modular pattern for conventional laboratory layouts, with flexibility for future changes stressed.* (Case study of entire hospital group, July 1951 P/A). Photos: Ezra Stoller, except as noted

client	Massachusetts General Hospital
location	Boston, Massachusetts
architects	Coolidge, Shepley, Bulfinch & Abbott
electrical engineers	Hixon Electric Company
heating-ventilating engineers	Office of Hollis French
general contractor	Turner Construction Company

research building

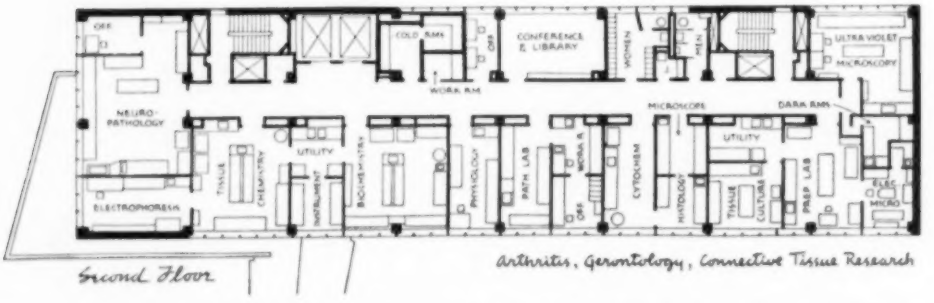
Designed with special current emphasis on research into the metabolic diseases of aging—heart disease, arthritis, and cancer—the six working floors of the air-conditioned building have labs along the west walls and across the ends; services, specialized rooms, and storage rooms line the east walls. In the basement is a general utility area and rooms for heavy apparatus.

The design approach was to develop a repetitive pattern of flexible, economical, laboratory modules. Result: 20-ft bays divisible into 10-ft units ("more economical than two 12-ft bays") and all mechanical service risers in each 20-ft bay ("more economical than in every 12 feet"). Utilities within each of the bays are distributed at the ceiling—except for wastes, which feed down within the unit. Thus, alterations are possible in one bay without disturbance to occupants below. This system also makes possible island work stations, which are required in the program. Strip windows are used for maximum light



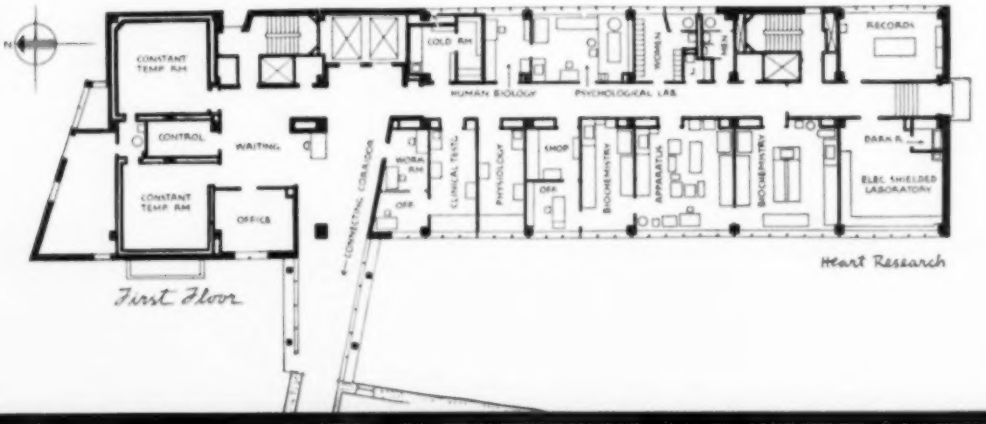
Third Floor

Cancer Cell Chemistry, Growth Studies, Inorganic Chemistry



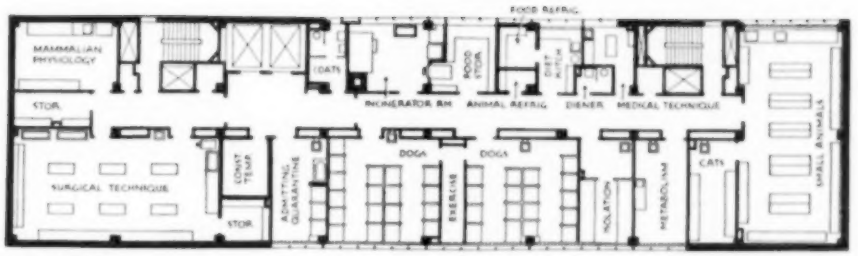
Second Floor

Arthritis, Gerontology, Connective Tissue Research

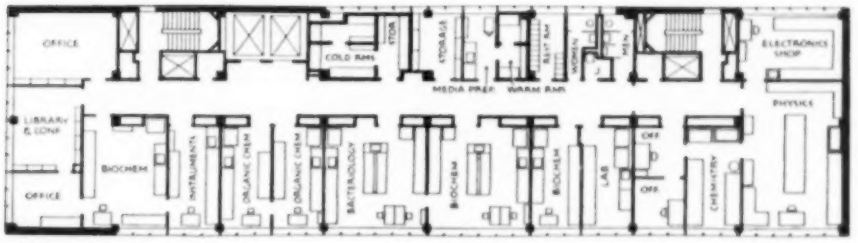


First Floor

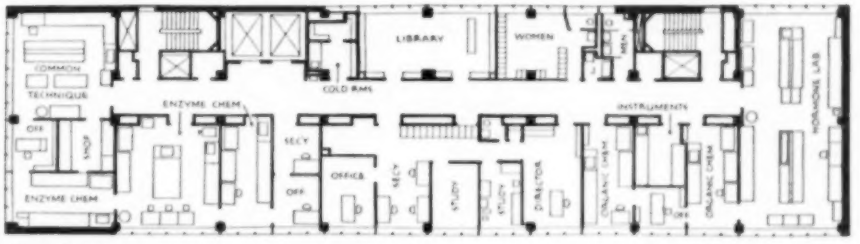
Heart Research



Sixth Floor — Animal Farm



Fifth Floor — General Biochemistry, Enzyme Research



Fourth Floor — Cancer Enzyme Chemistry, Organic Chemistry, Hormone Laboratories

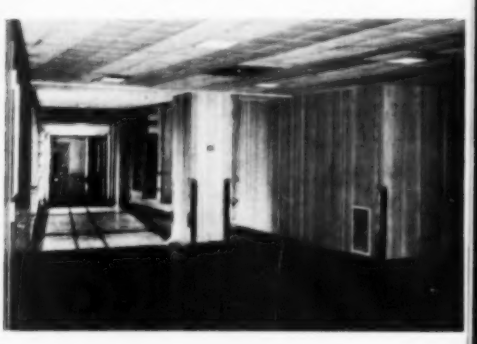
and flexibility in partition location. Off-center placement of the corridors allows maximum depth for most of the lab space.

Built on reinforced concrete footings, the frame is of steel, which was plentiful at the time and considered more adaptable than concrete to expected future alterations. Flat slabs span the 20-ft bays, with the exposed concrete forming continuous, smooth ceilings. Exterior walls of the building are cinder-concrete block, treated with a pore filler and painted. Floor surfaces are asphalt tile. In the corridors, acoustic metal pan ceilings are used, while lab ceilings are simply paint on concrete.

A two-pipe atmospheric steam-heating system uses fin tube radiant convectors, operating under zone control from outside weather compensators. Cooled, heated, and filtered air is supplied to all laboratory floors, with distribution ducts run on corridor ceilings, from which sidewall air diffusers serve adjacent rooms. In general air is exhausted through lab hoods, with duct work arranged for multiple-group system. There are five hoods on each exhaust fan, separate ducts running from each hood to the penthouse fans. All animal rooms have separate air-conditioning units; chilled water is supplied to central and self-controled units; refrigerating compressors are in the basement.

The lighting system is designed with a concealed grid system in the ceiling slab, the exposed pipe conduit allowing future relocation with minor change.

The typical larger lab (left) *occupies one entire 20-ft structural bay; numerous small labs and offices are two to the bay, or 10 ft wide; from window wall to corridor wall is approximately 25 ft.*



Some of the departments have their own libraries and conference rooms, such as the one on the fifth floor (above). *Joining the lobby of the research building* (right, above) *with the 19th Century Bulfinch Building is a glazed passageway* (right).
Photos of library and corridor: Bill Calvert

laboratory plumbing

by John Edmund York*

In addition to normal building services, a modern laboratory must be provided with some or all of the following services: steam, condensate, city water, nonpotable water, hot water, distilled or deionized water, high- and low-pressure compressed air, vacuum, gas, hydrogen, oxygen, nitrogen, hydrogen sulphide, waste lines, and refrigeration.

Laboratories may consist of a single room, many rooms in a specially constructed building, or intermediate arrangements.

The piping is an important part of a laboratory and should be given proper consideration in the preliminary stages of the design to avoid a makeshift appearance and to insure long, trouble-free service.

When building or equipping a laboratory it is always advisable to use the services of competent architects and engineers who are familiar with the special problems involved in this class of work. Before considering the general distribution system it will be advantageous to review briefly the individual services.

steam and condensate

Steam will generally be brought to the laboratory at higher pressures (*Figure 1*) than required for use within the building.

Pressure-reducing valves should be provided to deliver steam at pressures up to 15 psi for building heating, low-pressure laboratory services, and for heating water for washing laboratory glassware and equipment. The same pressure-reducing valve may be used for the latter two services.

Steam at pressures up to 30 psi may be required for stills and at the full available pressure for hot plates.

Condensate should be drained from equipment, mains, risers, and radiation through suitable traps and collected in a vented receiver from which it may be pumped back to the boiler.

Where frequent changes are not anticipated steam lines may be of black steel with welded joints, but where changes are probable screwed or flanged joints should be used.

Condensate lines may be of copper tubing with sweated joints or as described for steam lines.

water

City water should be supplied to all equipment which may be used for obtaining drinking water, washing of burns or wounds, preparation of food products or medical supplies.

Nonpotable water may be used for cooling and other services but no cross connections between city water and nonpotable water should be permitted.

Hot water may be supplied from a storage-type heater or an instantaneous-type heater (*Figure 2*). The latter will cost less, occupy less space, and can continuously supply hot water to the limit of its capacity, but it does not permit a close regulation of the temperature of the water as with a storage-type heater and requires larger steam supply.

For hot-water distribution through large buildings a gravity or forced-circulation system should be provided to insure delivery of hot water where needed without delay or waste of water.

With low buildings and long mains a small circulating pump should be provided on the return side of the system, to insure proper circulation. Sufficient water should be circulated to offset the heat loss through the system with a drop of not more than 5 to 10 degrees.

Water heaters and hot- and cold-water lines should be constructed of corrosion-resistant materials, preferably copper.

deionized and distilled water

For many laboratories mineral-free water is a satisfactory substitute for distilled

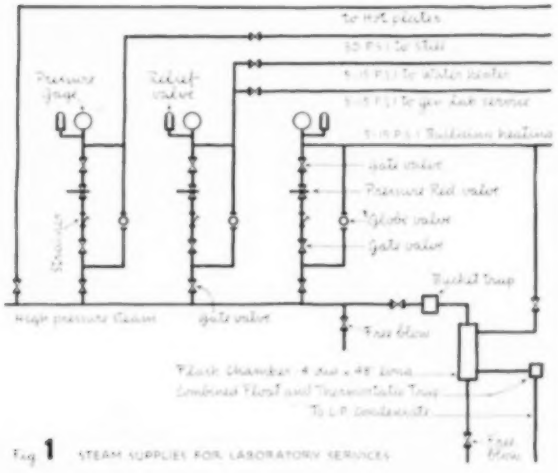


Fig 1 STEAM SUPPLIES FOR LABORATORY SERVICES

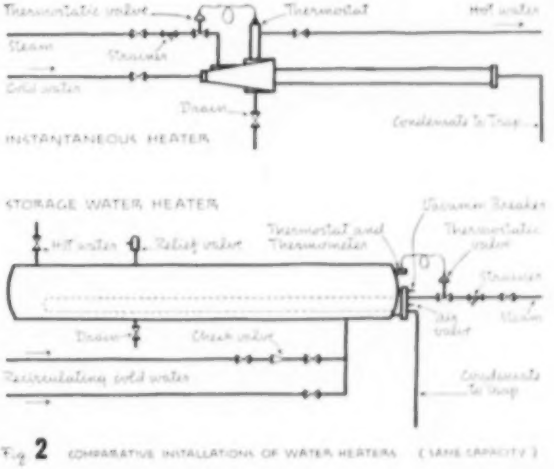


Fig 2 COMPARATIVE INSTALLATIONS OF WATER HEATERS (SAME CAPACITY)

* Registered Professional Engineer, Massachusetts and New York

water and is much less expensive.

The equipment for demineralizing or deionizing water causes it to flow through two alternately arranged beds of cation and anion resins. The cation resin attaches the dissolved metallic ions to itself and replaces them with hydrogen ions. Thus the dissolved salts are converted to their corresponding acids. The anion resin then absorbs these acids and delivers a mineral-free water. When the exchange capacity of the resins is exhausted they are regenerated without the use of heat by a low-cost regenerant solution.

If, in addition to being free from minerals, the water must also be free from organic, inorganic, gaseous, bacteriological, and pyrogenic impurities, a still may be used in which the water is first preheated and vented to remove the gases, and then converted into pure, dry steam by gently boiling, with the vapors disengaging at low velocities and then condensed in a tin-lined, vented condenser. Where extra purity is required, double or triple stills may be used.

If the deionized or distilled water is to be piped to several locations the materials for the piping system must have no effect on the water. Block tin, pyrex glass, or aluminum satisfy this requirement.

Before putting a distilled water system into use it should be thoroughly flushed out with city water and then with distilled water.

compressed air

Compressed air is commonly supplied to laboratory tables at 5 to 10 psi, at which pressure the ordinary laboratory cock will discharge 1½ cu ft of air per minute. For special purposes air at higher pressures may be required.

If both low- and high-pressure air are required, separate compressors should be used. Low-pressure air compressors may be either of the rotary or reciprocating type. For high pressures the reciprocating type is more commonly used and may be of the two-stage type with an intercooler. Compressors may be either air- or water-cooled, the latter being preferable, especially for high pressures.

Compressors should not be oversized, but for a limited number of cocks a compressor capable of supplying the full demand with all cocks in use may be provided. A receiver should always be provided to prevent too frequent starting and stopping of the compressor.

Clean, cool, dry air should be provided for the compressor and a filter and silencer should be installed on the inlet.

There should be no valves between the compressor and the receiver, and the receiver should be equipped with a pressure gage, relief and drain valves.

Where dry air is essential, high-pressure units should be furnished with an aftercooler.

Piping should be as specified for steam lines.

vacuum

For normal laboratory requirements vacuums from about 14 to 20 in. of mercury are adequate at the outlets. For special cases vacuums up to 28 in. or more may be required.

For vacuums from 14 to 20 in. a good grade of rotary-vacuum pump may be used. The size of the pump is a matter of good judgment rather than mathematical computation.

If the vacuum pump is to be operated automatically it is essential that it should not be oversized appreciably, as this will cause cycling unless special precautions are used to prevent this.

For maintaining the higher vacuums, a high-grade reciprocating pump may be used.

Piping should be as specified for steam lines. Where screwed joints are to be used care must be exercised in threading the piping in order to insure tight joints. After the line has been carefully made up, dissolved beeswax or varnish should be applied to the theaded joints while the system is under a vacuum to seal off any small leaks.

gas

Gas is normally supplied to a building at a pressure of about 6 in. of water; it may be manufactured gas with a calorific value of 550 Btu per cu ft or natural gas with a calorific value of 1000 Btu per cu ft. At 6 in. the flow through a standard gas cock will be about 14.5 cu ft per hr and at 3.5 in. (the minimum for satisfactory operation of Bunsen burners) about 8.5 cu ft per hr.

Gas-blowing equipment may require pressures up to 5 or 6 psi and rotary positive displacement gas boosters must be used.

Where a booster is used a mercury seal should be provided to prevent damage to the meter housing in case of excessive suction.

Where neither manufactured nor natural gas is available, propane or butane gas can be furnished in standard-sized cylinders containing the equivalent of 850 and 640 cu ft, respectively, at atmospheric pressure. The actual pressure in the cylinder in each case is 102 psi at 70 F.

Gas cylinders should, when possible, be installed out of doors and must be provided with regulators of an approved type to reduce the pressures to that required inside the building.

Piping should be black steel with screwed malleable or steel fittings, or welded joints. Joints for piping systems supplying propane or butane should be welded or brazed. Plug-type cocks should be used for stops. For the larger sizes these should be of the lubricated type.

oxygen, hydrogen, and nitrogen

These gases can also be obtained in standard-sized cylinders which may be installed in a similar manner to cylinders of propane and butane.

Oxygen cylinders and manifolds should be separated from cylinders and manifolds containing flammable gases by fire-resistant barriers, cylinders, manifolds, and so forth, should be kept free from oil or other combustible materials and pipe scale.

All parts of oxygen systems which are exposed to cylinder pressures should be constructed of nonferrous materials designed to withstand the very high pressures. Joints may be welded, soldered, or screwed and made up with litharge and glycerine.

The pressure in oxygen, hydrogen, and nitrogen cylinders at 70 F is 2000 psi and the cylinders contain approximately the equivalent of 200 cu ft of gas at atmospheric pressure.

All parts of hydrogen and nitrogen systems which are exposed to cylinder pressures should be constructed of extra-heavy steel pipe with forged steel fittings. Joints

should preferably be welded and if screwed should be made up with litharge and glycerine.

Sharp dies should be used to insure perfect threads on screwed piping. Before placing a piping system in service it should be tested with air to 1½ times the maximum pressure. After testing, oxygen systems should be washed out with a suitable nonflammable solution such as caustic soda or trisodium phosphate and then steamed out thoroughly to remove all dirt and grease. Valves should be dismantled and thoroughly cleaned in a similar manner.

hydrogen sulphide

Hydrogen sulphide is an extremely poisonous gas and has a very unpleasant odor. It is supplied in cylinders having a capacity of approximately 1000 cu ft at atmospheric pressure and it has a pressure of

Fig. 3 HORIZONTAL DISTRIBUTION

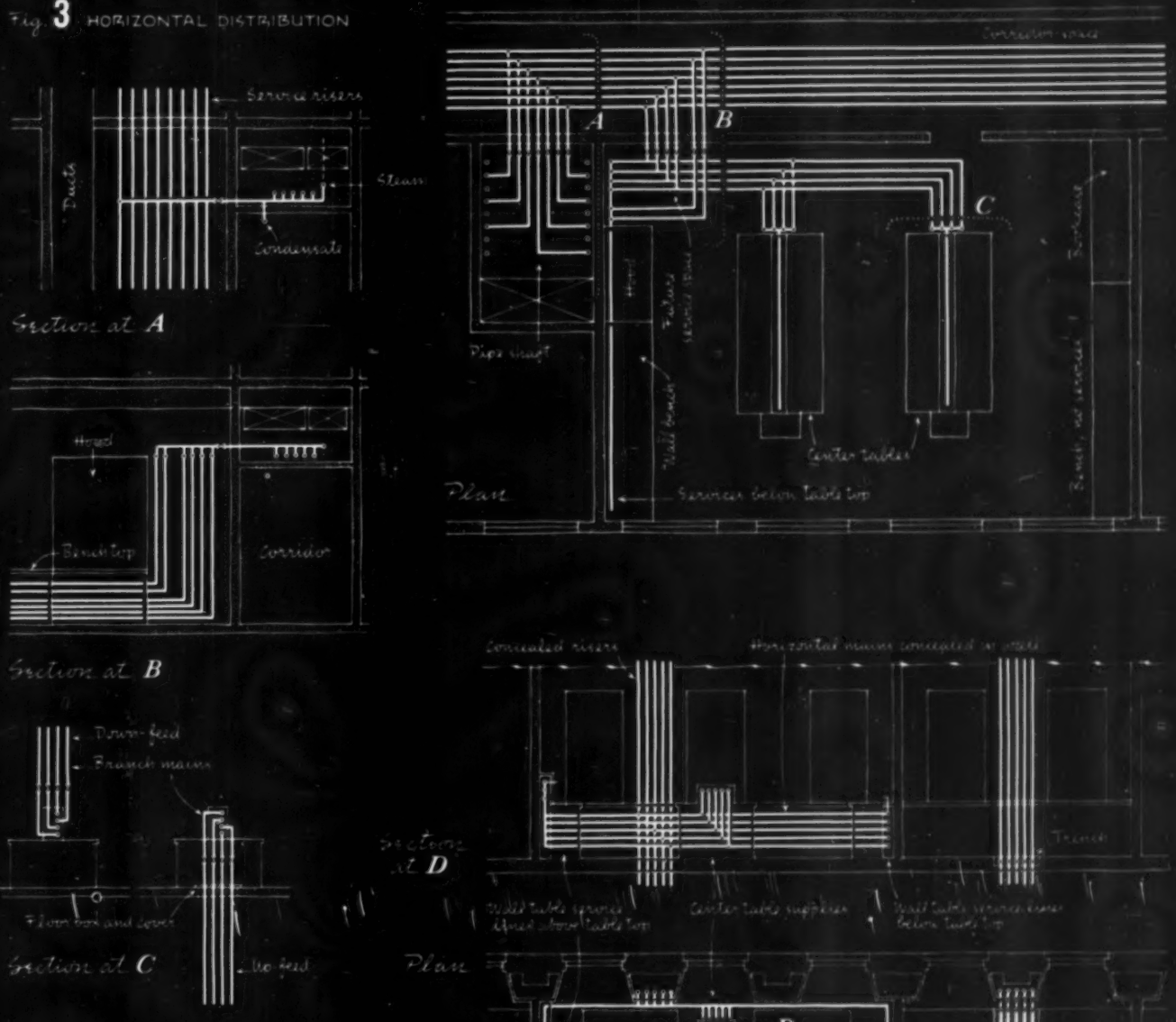


Fig. 4 VERTICAL DISTRIBUTION

252 psi at 70 F. It is corrosive, but because the gas is normally very dry, brass pipe and fittings are satisfactory.

A single-stage regulator with a forged brass body and a steel gage with stainless steel parts should be provided.

Aluminum and hard-rubber pipe and cocks are used extensively for distribution.

waste piping

Laboratory wastes are variously constructed of cast iron, lead, chemical stoneware, high-silicon iron, synthetic-phenol-formaldehyde resin, and glass.

The use of cast-iron pipe for waste connections, especially if concealed, is not recommended where acid wastes are encountered, and should particularly be avoided when laboratories may be idle for considerable periods.

The use of lead for laboratory wastes should be confined to traps and to branch connections between outlets on laboratory furniture. Lead pipe which is used for domestic plumbing contains a small percentage of zinc and is unsatisfactory for chemical work. Chemical lead should be 99.98 percent pure and should withstand the action of strong sulphuric acid up to about 132 C. Joints should preferably be wiped or burned joints.

Chemical stoneware with bell and spigot joints provide an excellent material for concealed wastes. The joints should be made up with asbestos rope wicking impregnated with acid resisting graphite or mastic and a hot melting acid-proof calking compound.

For horizontal lines two rings of packing and a topping collar of about 30 percent ground asbestos, 20 percent talc and 50 percent silicate of soda, to keep the calking compound from running when subjected to heat, should be used.

High-silicon pipe is widely used but is expensive and brittle and care must be taken when installing and making joints to prevent damage to the pipe. Space should be left between the end of the spigot and the bottom of the hub to avoid expansion strains. Two rings of packing, as for the horizontal runs of stoneware pipe, should be used and the remaining space filled with lead.

Synthetic-phenolformaldehyde pipe has strength, toughness, and durability together with excellent corrosion resistance and may be threaded and coupled together or furnished with bell and spigot ends for which joints may be made in the same manner as for stoneware pipe.

Pyrex glass is also used in some laboratories for waste piping. Important characteristics of this glass are its very low thermal expansion and its excellent chemical stability.

traps for waste systems

Laboratory waste systems are generally connected to the sanitary sewer system, and unless the local plumbing code permits otherwise, must comply with regulations for sanitary plumbing.

As laboratory wastes are generally sterile, the use of a single trip for several outlets on a long branch, or even several items grouped together in one room, is frequently permitted.

It is not generally advisable to connect wastes from adjacent laboratories through a common trap as this makes it possible for fumes to pass between rooms which may be objectionable or even dangerous.

refrigeration

For normal requirements a direct expansion system using Freon will be satisfactory as there is no danger in case of leakage.

For very low temperature work a two-stage ammonia system may be required with the refrigerating machinery located in a separate room which is well ventilated and has direct access to out-of-doors.

Normal construction for either type of system is satisfactory.

distribution systems for laboratory services

While the present tendency is to conceal the service piping, especially in laboratories for pharmaceuticals and food products, there are many installations where for economy or ease of maintenance pipes are exposed. In such cases a poorly designed or carelessly installed system may mar the appearance of the laboratory.

For large multistory laboratories most of the services will originate on the ground floor and from there either horizontal or vertical distribution may be used.

Each has its advantages which should be carefully considered in the early stages of the design of a laboratory.

horizontal distribution

Pipe shafts extending from the ground floor to the top of the building may be suitably located for the installation of risers for service lines. These shafts should be of adequate design to permit an orderly arrangement of the risers with free access to shut off valves and for maintenance of the piping. The pipe shafts should be built in such manner that they will not create a fire hazard. Horizontal distribution mains (*Figure 3*) should be taken off near the ceiling at each floor and should be provided with shut off valves. Corridor distribution (*as shown*) is desirable, unless ceiling heights are too low to permit an orderly arrangement of duct work, lights, and piping. Ducts may be installed immediately below the ceiling, and service mains (except steam and condensate) supported on group hangers at sufficient distance below to provide space for branch duct work and piping above the mains.

Uniformly sized metal boxes with covers on each side may be installed in corridor walls for bringing services into the laboratories. The same arrangement of piping should be maintained and a shut off valve provided on each service when it enters the laboratory.

Where possible, piping should not be run over wall or center tables. Either upfeed or downfeed systems may be used for supplies to tables. Upfeed avoids vertical drops but has the disadvantage that in case of changes or repairs laboratories on two floors are affected.

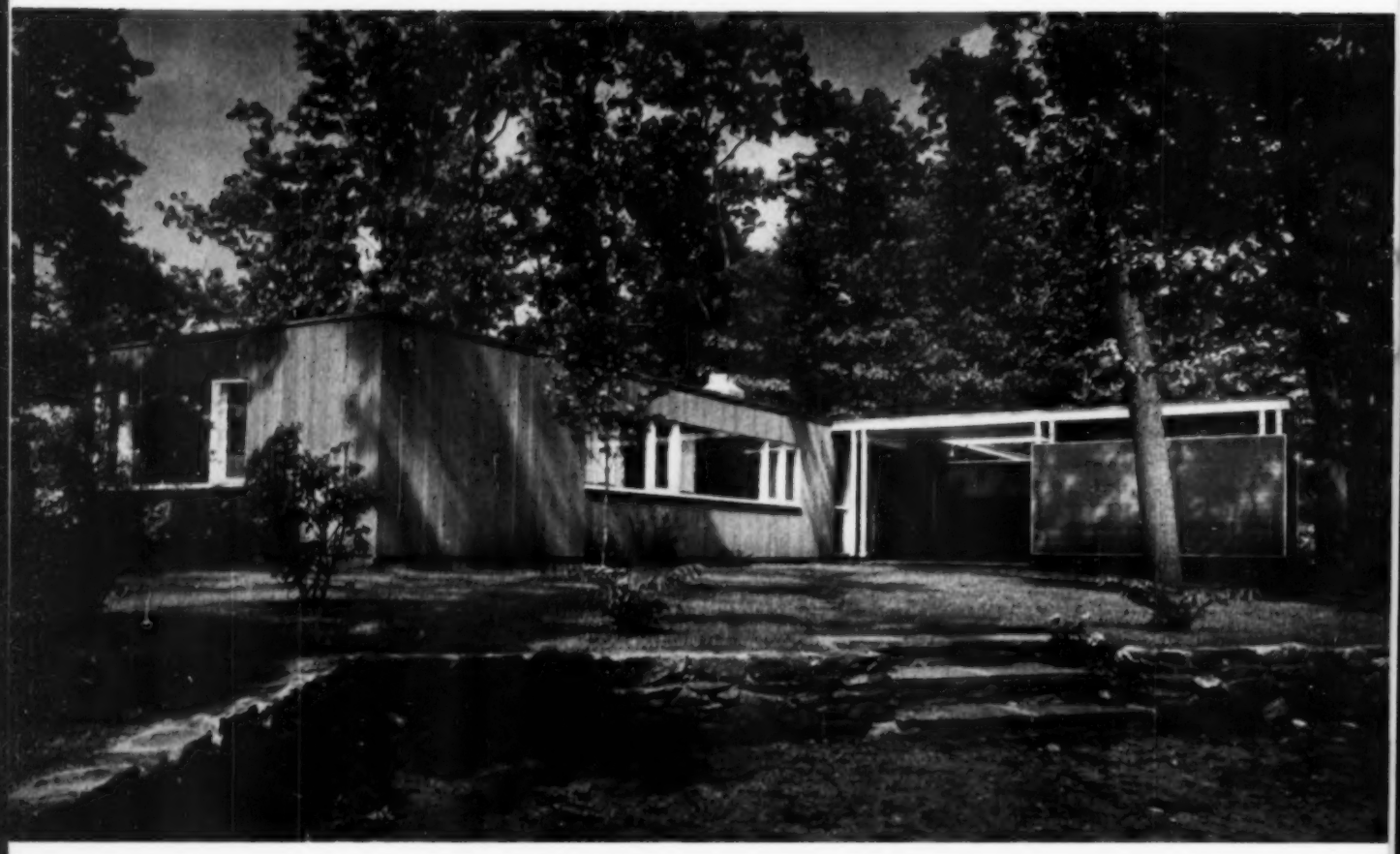
vertical distribution

For a multistory building with a typical arrangement of rooms and equipment on each floor, a vertical system of distribution with concealed risers may advantageously be used (*Figure 4*). Removable panels may be provided for access to the risers and shut off valves. Branch connections to center tables adjacent to outside walls may be completely concealed and turrets at each end of the table may be provided with the necessary cocks for each service.

Piping to serve wall benches and hoods may be concealed below the top of the bench or may be run exposed along the partition wall. With laboratories of greater depth it may be advisable to provide risers in corridor partitions to serve equipment adjacent to these partitions.

house

location	North Kingstown County, Rhode Island
architect	Conrad E. Green

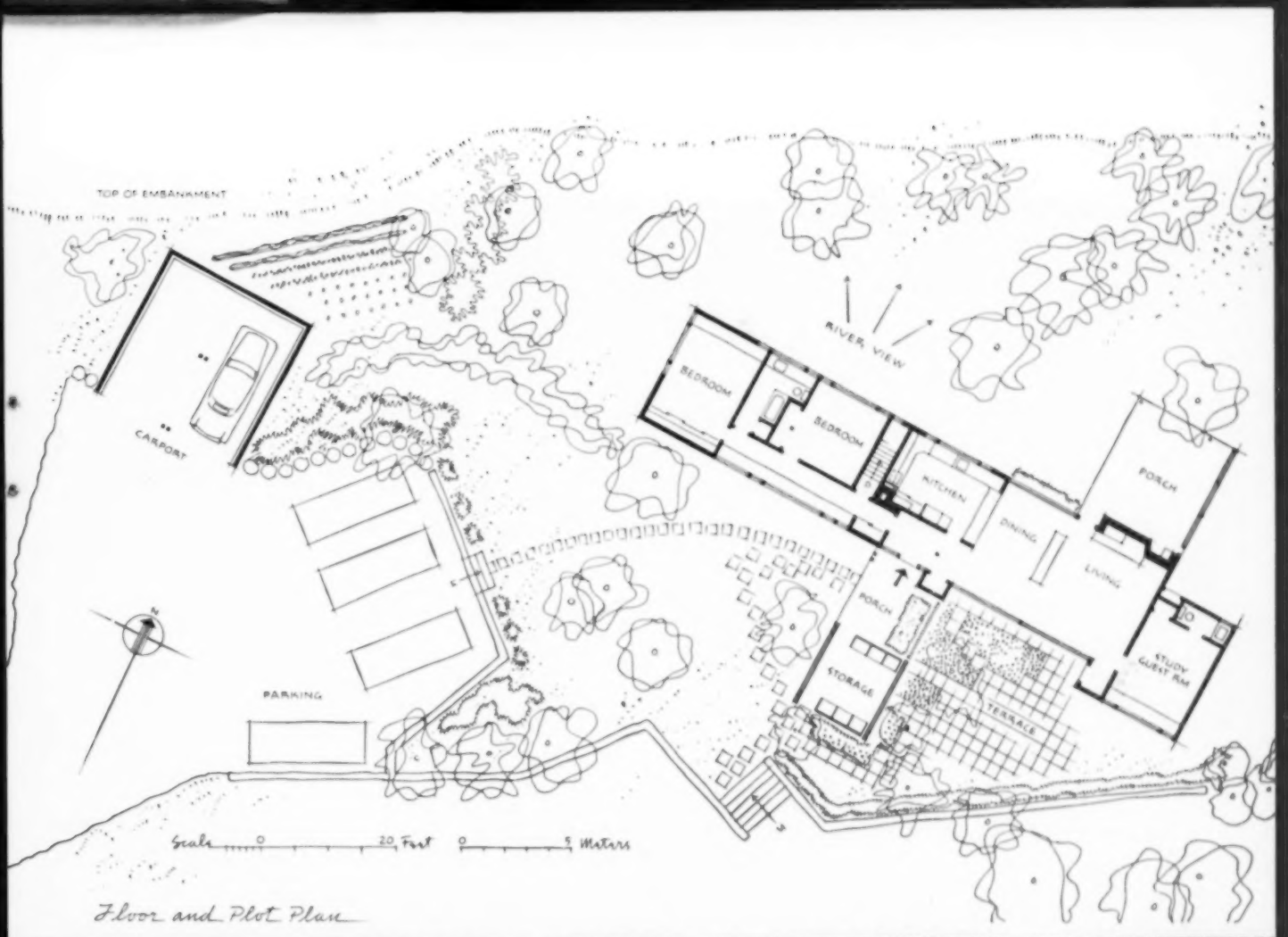


Planned for a young couple with one child, this genial house was designed for servantless living. Requirements included two bedrooms, a combination study-guest room, and a scheme that would simplify maintenance and allow future expansion with minimum basic change. Outdoor living for seasonal use is provided by an open terrace on the south and a screened porch on the north.
Photos: Richard Garrison (except as noted)

The favored site consists of seven wooded acres, with the building located on a bluff overlooking a wide river to the north, and a pleasant closer view across a wooded ravine to the south. Prevailing breezes are west-northwest in summer; north, in winter. Access was possible only from the southwest, and a neighboring house is fairly near by on the east.

Among the planning considerations, the architect tells us, was the wish to take full advantage of the commanding northerly view, at the same time not overlooking the more intimate southern outlook; provision of view for all rooms; adequate cross ventilation; privacy from the neighbors to the east; and the wish to make the kitchen the heart of the house.

Structurally, the house is a combination of steel and wood frame, with standard wall construction, using redwood outside and plastered walls within. The roof is composed of 3″ x 8″ dense select structural fir (exposed on the interior); two layers of glass-fiber insulation; 5-ply tar and gravel. The decision to use the wood plank was made for simplicity of installation, eliminating joists, bridging, roof sheathing, lath and plaster; the plank thickness was determined by the (in most cases) 12-foot spans. Steel beams were used in living areas since wood beams would have been excessively deep. The house is heated by a radiant system, with copper coils in the concrete floor slab; an oil-fired hot-water boiler occurs in a small basement beneath the kitchen area.



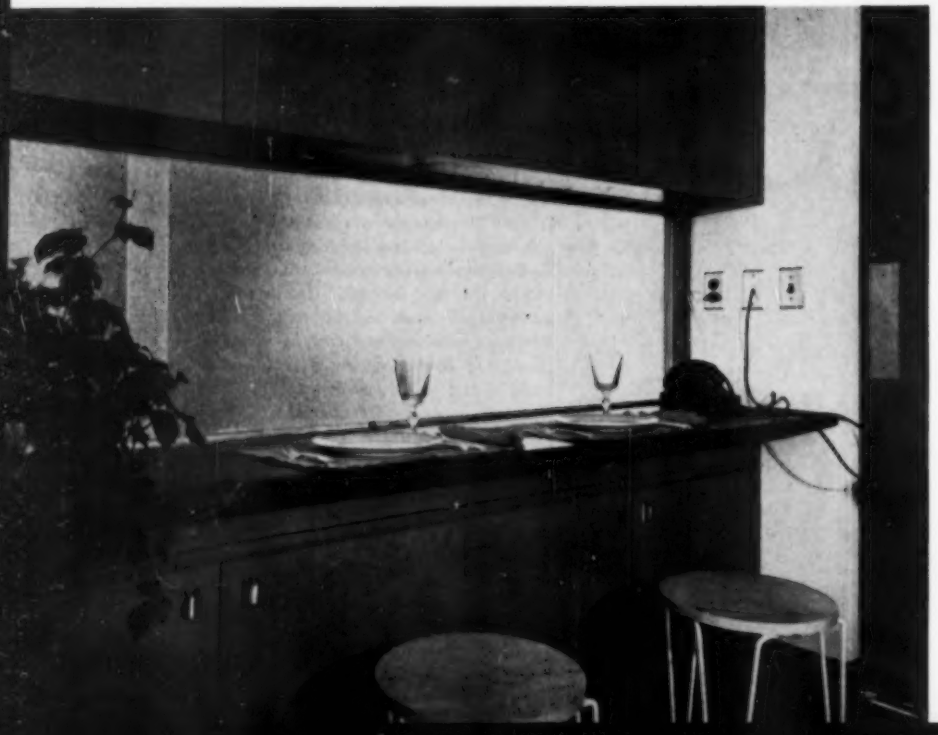
Floor and Plot Plan

The living-dining area is informally partitioned by a counter-storage cabinet, with specialized compartments opening on both sides. **Note** *privacy provided for room toward the south* (above) *by the wood-louvered wall of the entrance porch. The exposed planking of the roof construction is apparent in both this room and the bedroom hall* (right), *which has continuous built-in storage units under the south window band.*

Looking toward the fireplace corner from the dining end of the room (above), the screen porch is seen through the window at left. Glazing on this wall is double-insulating type. Flooring in main living rooms is asphalt tile; in the kitchen, rubber tile; and in baths, ceramic tile. The steel beams that support the roof in this area continue out as porch frame and (on the south) under the projecting roof sunshade. Detail of the opened cabinet (left) demonstrates the departmentalized organization of the storage space.

Photo at left: Laurence E. Tilley

Between the dining area and kitchen, the partition consists of a pass-through storage unit at both top and bottom, with a broad counter, with sliding obscure glass panels between. With the panels open, the counter may be used for serving, or as a snack bar. Photos, right and below: Laurence E. Tilley



prestressed concrete today

by J. J. Closner and Cedric Stainer*

Prestressed concrete is to many minds one of the 20th Century's most important additions to our structural resources. Brought into being by the incorporation of a dynamic steel musculature into the inert body of concrete to give this ancient construction material tensile strength comparable to its intrinsic compressive strength, prestressing has established its merit on a world-wide proving ground.

In the three years since PROGRESSIVE ARCHITECTURE last reported comprehensively on this subject *(October 1949)*, prestressed concrete has gained more ground than in the entire quarter-century since it became a construction reality. Its advance has been three-front—in research development, in applications, and as a consequence of both in public acceptance.

Certainly the current defense program has helped to spotlight the savings of materials inherent in prestressed-concrete design. There are vivid examples. Only 8.08 tons of steel were required to construct the six prestressed-concrete floor girders for a new building at Manhattanville College of the Sacred Heart, at Purchase, New York, whereas the original design in structural steel had called for 72 tons. *(Figure 1)*. A 5,000,000-gal prestressed-concrete water-storage reservoir is now being built at Richmond, Virginia, with only 210,000 lb of steel, although the city had actually obtained a 1,000,000-lb allocation for the project from NPA.

It is a conservative estimate that a structural member in prestressed concrete may be built with only half the concrete and a quarter of the steel required for a corresponding member in reinforced concrete; in comparison with structural steel, the saving in steel is even greater.

These savings of materials are only a fragment of the picture. They produce in turn savings in deadweight, which means a substantial reduction in foundation costs. Depth reduction of the main carrying members brings savings in over-all building height. Longer-span construction made possible through prestressed design results in maximum space utilization.

In addition, prestressed concrete makes definite esthetic contributions. Not only does it allow lighter-looking structures, with far lower depth-to-span ratios than are obtainable with reinforced concrete, but it also permits structural designs that are precluded with other forms of construction.

Scientifically, prestressed concrete has attained world significance. Within 18 months after the first United States Conference on Prestressed Concrete was held at M.I.T. *(August 1951)*, the new medium was an important subject at numerous technical gatherings throughout the country.

Its stature is documented with equal weight in the roster of users and uses. In this country, alone, it is being employed in every section by private enterprise and by all levels of government construction, on a rapidly increasing scale. This is equally true abroad. In England, a recently published report of the works directors of the Admiralty, the Air Ministry, the War Office, and the Ministry of Works on economy of building materials, recommends the use of prestressed concrete in almost every conceivable form of construction.

Similarly, our own President's Materials Policy Commission, in its notable report entitled "Resources for Freedom," has stated the belief that prestressed concrete "will be particularly successful in replacing reinforced concrete."

development of prestressed concrete

This article does not pretend to cite more than a partial list of structures, techniques, even products themselves, which prestressing has created.

In bridges the Federal government is using a prestressed concrete structure to carry a main highway across the spillway of the monumental Garrison Dam, near Bismarck, North Dakota. Florida is using prestressed concrete for the 3½ miles of trestles of the huge Pinellas-Manatee Crossing over Tampa Bay. Philadelphia built its distinguished Walnut Lane Bridge across a Fairmount Park ravine in prestressed concrete. New York City is using it to replace the immense North River pier destroyed by fire in 1947. Massachusetts has let contracts for the construction of four highway bridges at Newbury and Newburyport, in what is literally a special project to ascertain the most economical and suitable methods of prestressed design for bridges in that state.

In buildings, designers are finding prestressed concrete an effective solution of their framing problems. This is especially true of buildings requiring large clear spans for such areas as school gymnasiums and auditoriums. School design frequently calls for spans brought well into the range of real economy through prestressing.

The Bishop DuBourg School (Murphy & Mackey, Architects) at St. Louis, Missouri, designed in the prestressing system of Eugene Freyssinet, noted French engineer whose studies of plastic flow and shrinkage in concrete were a major factor in the development of the medium, uses 94 ft roof beams to span the gymnasium. The girders of the Manhattanville College building, (Eggers & Higgins, Architects) first major floor system in the United States to be supported by prestressed concrete, are 65 ft long and less than eight percent deeper than they would have been in structural steel *(Figure 1)*.

Europe, still ahead of us numerically in linear structures, presents perhaps the only prestressed-concrete multistory construction. The most recent developments in this field are the work of Dr. Fritz Leonhardt, German bridge designer who is the inventor of the first practical prestressing method which achieves continuity in structures. A Leonhardt bridge is shown *(Figure 2)*; his methods and techniques will be described below.

England has developed a rewarding application of prestressed concrete in combination with shell-roof construction

*Vice-President and Acting Chief Engineer, respectively, The Preload Company, Inc., New York, New York

which has captured the imagination of British architects to the extent that some 500 shell-roofed structures have been built there since World War II. A striking example is a 300-ft-long Bournemouth bus-terminal garage with a roof formed by nine thin concrete shells resting on prestressed edge beams which span 150 ft and provide a clear floor space of 45,000 sq ft *(Figure 3)*.

In the circular field, the prestressed domes, which The Preload Company, New York, developed to roof many of the tanks it has designed, may provide a fertile ground for exploration by architects of sports arenas, theaters, and other structures demanding large clear spans, unobstructed views, and maximum availability of good seats. These domes, prestressed at the abutment ring and varying in thickness from 2 in. for a 50-ft diameter to 6 in. for a 250-ft diameter, are spherical shells with a rise of only one-eighth their diameter. They are built without roof trusses or interior supports, the abutment ring being carried by the side walls or by columns at the periphery of the dome. Only through prestressing may such domes be built without dangerous deflections when the falsework is removed. And they require only 4-½ to 5 lb of steel of all classes per sq ft of dome area.

In Canada, the city of Sherbrooke, Quebec, is building a 4000-seat municipal stadium with prestressed concrete for its frame, seating slabs, and 25-ft cantilever roof. *(Figure 4)*. This structure is being built with only 12.75 lb of steel of all classes and .15 cu yd of concrete per seat.

In America, the achievement of mass production of prestressed concrete blocks combines with the development of an integrated block system for area prestressing to provide a major construction efficiency. This permits the designer to develop a standard modular relationship for different bay sizes and enables the contractor to order factory-made blocks for on-site assembly and to erect floors and roofs without heavy lifting equipment.

Prestressed concrete has made all these great strides despite two major handicaps —one technological, the other the result of professional practices within the industry itself.

The technological handicap was that the inherent economies of the medium were offset by the cost of labor for placing, stressing, and anchoring the tensioning units. This has now been largely overcome. In the opinion of many constructors, the works of Leonhardt and Donovan H. Lee, London consulting engineer, are among the most notable recent achievements in this direction.

Leonhardt's method of continuous prestressed bridge construction is based on concentrating the very large prestressing forces required in bridges so that a contractor can prestress an entire structure in a single operation instead of wire by wire, or cable by cable, as other systems necessitate.

The late Dean Peabody Jr., professor of architecture at Harvard University, rated the importance of continuity as follows: "Prestressed concrete design is in its infancy until the engineers in the field and in the office can solve the $64-question of constructing economical continuous beams."

Continuity makes possible a saving of approximately 25 percent of the steel required for simply-supported prestressed beams. Leonhardt's techniques save half the man hours per ton of prestressing steel which other systems require to place, tension, and grout the cables for an entire structure. Thus, combining the reduced material and labor factors, it is seen that a Leonhardt structure may be prestressed in less than 40 percent of the man hours required by other systems using wires or cables as the tendons of prestressed concrete.

Lee's contribution is in the tendons themselves. In collaboration with McCall & Co., Ltd., British steel producer, he developed a new kind of steel bar of extremely high strength, together with anchorage, as the tensioning unit of prestressed concrete *(Figure 6)*.

Until its advent, wire was the only form of steel capable of the sustained high stresses essential for prestressing concrete. This bar is the only steel of comparatively large diameter which approximates the high tensile strength of wire. A 1-⅛-in. bar does the work of 22 wires each .196 in. diameter, a standard size in prestressing. One simplified bar anchorage supplants a multitude of intricate wire anchorages. Compared with wire, the use of this bar produces labor savings which, at prevailing wage rates for United States iron workers, may often exceed the entire cost of the prestressing material.

new operating concepts

In the matter of professional practices, for years every owner or builder wishing to erect a structure in prestressed design was confronted by a barrier of patents and proprietary systems. The resultant discouragement of numerous architects and engineers from exploring the potentialities of

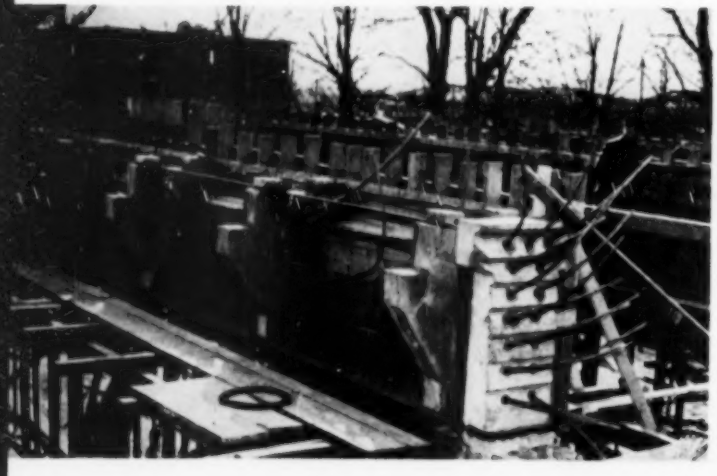


Figure 2—world's largest concrete-box girder span, across Neckar Canal near Heilbronn, Germany (above). *Completed in 1950, main span of 312 ft has a 1:56 depth-to-span ratio.*

Figure 1—progress photo (left) *shows one of six floor girders at Manhattanville College; twenty-two cables have been placed and member is ready for secondary reinforcement. Each cable, made of 12 high-tensile-steel galvanized .196 in. diameter wires, receives a pull of 26 tons during prestressing.*

the new medium was attested by no less an authority than Rear Admiral J. F. Jelley, Chief of the United States Navy Bureau of Yards and Docks, when he said at the M.I.T. conference in 1951: "We do have one serious handicap in prestressing. In the interest of obtaining adequate competition for our work, we are loath to use patented material. I find that many of the devices and methods now involved in prestressing are patented. The Navy will not make wide use of patented materials unless they are freely available to all contractors on an equal basis."

The Preload Company can lay reasonable claim to some of the credit for curing this ill. In its first 17 years this organization, along with others in the field, designed prestressed structures, under license of its patents, for its domestic construction subsidiaries and its foreign licensees. Ultimately it saw that the new medium had reached the stage at which public interest and profitable operation demanded the availability of broad, fundamental developments to the construction world at large on a normal competitive basis. Its opinion was sustained by the findings of a nationally known firm of management consultants, McKinsey & Co., which it retained to make an objective survey of the prestressing industry.

As a result, The Preload Company a year ago recast its entire operation and established itself as an independent firm of consulting engineers devoted exclusively to the design of prestressed structures—designing in any system best suited to the project at hand, serving any client who wishes to retain it, and using unrestricted prestressing systems of its own as a control on competing proprietary systems.

The company, in choosing this course, has sought to open up the entire field of prestressed concrete as a basic medium of structural design in which architects, engineers, and contractors everywhere can work as familiarly and unrestrictedly as they do in reinforced concrete and structural steel.

Leonhardt made Preload the exclusive licensee under his system for North America, Cuba, Great Britain, France, and South Africa largely because of its new policy and its willingness to relicense its clients at the cost of its own nominal royalty payments to him. Preload's efforts also led a group of American and Canadian business men to form the Stressteel Corporation to manufacture the bar and anchorage tensioning units under license from the Lee-McCall system proprietors and sell them on this continent on a price-list basis. Leonhardt's bridge-building methods are described here in some detail because his "Leoba" system for prestressing in multistory construction is largely derived from them.

A Leonhardt bridge starts with the construction, side by side on the abutment at each end, of semicylindrical blocks of reinforced concrete about which the prestressing cables are looped and anchored. The blocks rest on prepared basis for subsequent movement, although in small bridges the blocks at one end are stationary.

Rectangular, liquid-tight troughs to house the cables are placed horizontally throughout the length of the structure and supported on stirrups to provide the desired trajectory for continuity over supports. A mechanical dolly places the cables in the troughs. Friction along the cables during tensioning is overcome by developing a polygonal rather than a smoothly curving trajectory and placing paraffin-coated sliding plates between the cables and the trough lid or bottom at each direction-changing point.

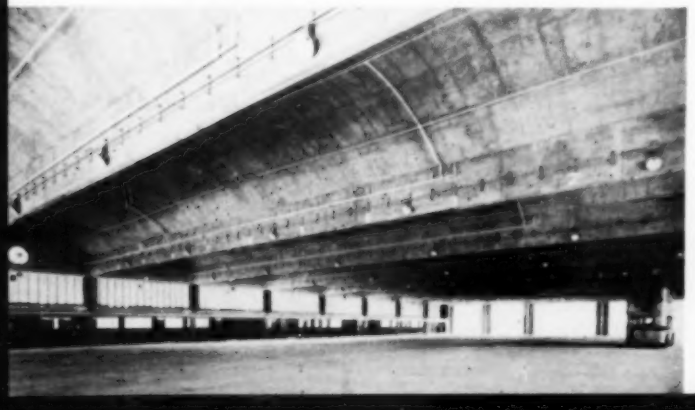
Recesses are provided for the installation of hydraulic prestressing jacks. When the concrete has been poured and has achieved the desired strength, the jacks are actuated to bear against the main-section concrete and force back the end blocks until the cables anchored around them have been elongated the desired extent. The resultant gaps between the main section concrete and the end blocks are then filled with concrete to maintain the elongation when the jacks are removed, and the metal troughs are filled with grout under pressure to provide continuous bond and protection for the prestressing elements. When completed, the entire structure is a solid mass of compressed concrete and tensioned steel.

In his multistory work, Leonhardt prestresses a beam with 12 wires arranged in two horizontal layers in a flat sheath instead of in the usual round cable, which enables him to achieve continuity over several supports without appreciable variation of the stress due to friction. The wires are attached to a fixed anchor at one end and at the other are anchored around a forged-steel plug which has a threaded recess for the insertion of a jacking bar.

After placement and curing of the concrete, the jacking end of the beam is covered by a temporary steel plate through an opening in which the jacking bar is screwed into the plug. The bar is then connected to a hydraulic jack which draws the anchor plug back until the wires have been elongated as required. A nut on the bar is run down to bear against the plate and maintain elongation when the jack is disconnected. Grout is then pumped through the plate into the plug recess and along the entire length of the wires, providing not only a permanent bearing surface for the anchor plug when the plate and bar are removed, but also permanent bonding for the wires.

Using this system, Leonhardt has erected a six-story paper plant at Heidenheim (*Figure 7*) and a four-story garage at Fellbach (*photo on cover*), both in Germany. The paper plant has a 63-ft span between two rows of columns and a 15-ft cantilever beyond each column line. The main girders are haunched at the supports and are

Figure 3—bus-terminal garage, Bournemouth, England. Nine concrete shells 2½ in. thick are supported by prestressed edge beams spanning 150 ft. Edge beams were prestressed by the Magnel-Blaton system with three parabolic cables; the final prestressing force applied was 438 tons.



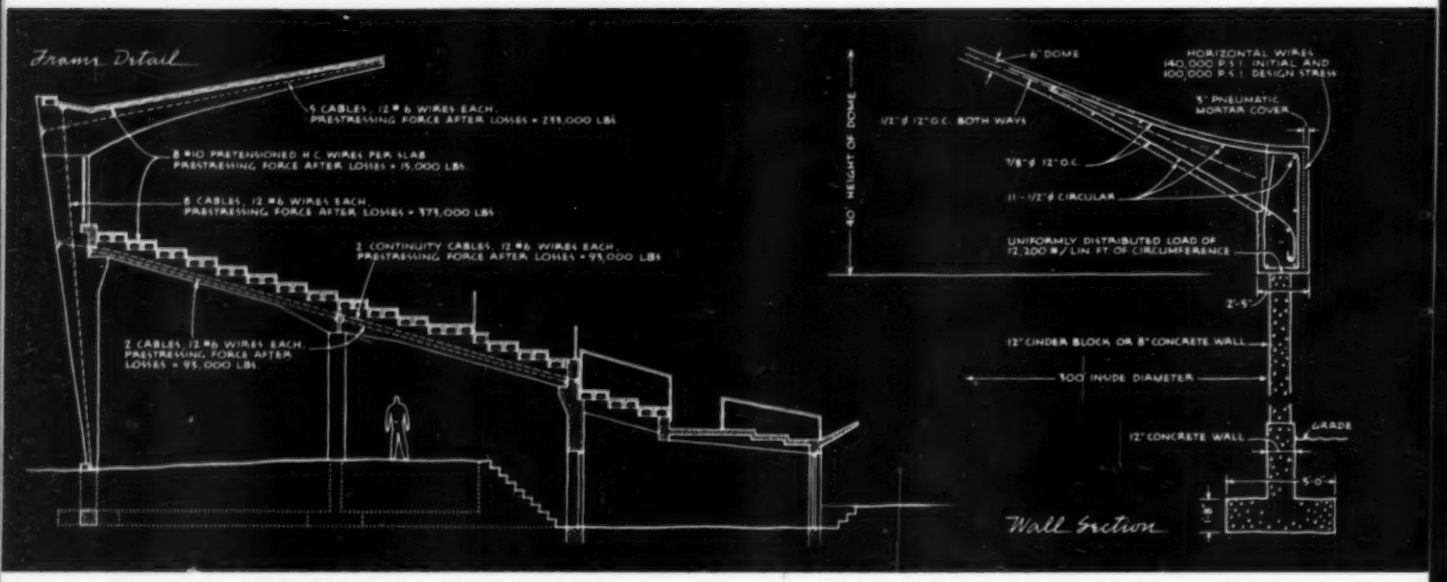

Frame Detail
5 CABLES, 12 #6 WIRES EACH.
PRESTRESSING FORCE AFTER LOSSES = 739,000 LBS
8 #10 PRETENSIONED H.C. WIRES PER SLAB
PRESTRESSING FORCE AFTER LOSSES = 15,000 LBS.
8 CABLES, 12 #6 WIRES EACH.
PRESTRESSING FORCE AFTER LOSSES = 573,000 LBS
2 CONTINUITY CABLES, 12 #6 WIRES EACH.
PRESTRESSING FORCE AFTER LOSSES = 93,000 LBS
2 CABLES, 12 #6 WIRES EACH.
PRESTRESSING FORCE AFTER
LOSSES = 93,000 LBS
Wall Section
6" DOME
HORIZONTAL WIRES
140,000 P.S.I. INITIAL AND
100,000 P.S.I. DESIGN STRESS
3" PNEUMATIC
MORTAR COVER
1/2" ø 12" O.C. BOTH WAYS
7/8" ø 12" O.C.
11 - 1/2" ø CIRCULAR
UNIFORMLY DISTRIBUTED LOAD OF
12,200 #/LIN FT OF CIRCUMFERENCE
40' HEIGHT OF DOME
2'-5"
12" CINDER BLOCK OR 8" CONCRETE WALL
300' INSIDE DIAMETER
12" CONCRETE WALL
GRADE
5'-0"

Figure 4—municipal stadium (above left) *in Sherbrooke, Quebec, Canada, is a unique example of a prestressed-concrete frame: supporting column, roof slab, frame, and seating slab were all prestressed. Supporting column and roof slab were prestressed together, making a two-piece monolift.*

Figure 5—section (above right) *shows possible prestressed-concrete solution for a 300 ft diameter sports arena with dome-shaped roof. The 6-in. thick spherical shell can be restrained at the edges by a prestressed abutment ring, 2 ft 2 in. thick and 6 ft deep, resting on a 12 in. concrete-block wall.*

2 ft 9 in. deep at midspan, a depth-to-span ratio of 1:23. The spacing between the girders is 22 ft 6 in. and the floor load is 154 psf. The garage involves spans of 36 ft 6 in. with a girder depth of 2 ft 7 in. at midspan.

Unlike the Leonhardt methods, the Lee-devised bar-tensioning units already have been practically demonstrated in the United States although they will not be in production domestically until early this year.

The material was imported from Britain to put the Tampa Bay bridge trestles in tension, and only by its use could prestressed design have competed successfully with designs in reinforced concrete (*Figure 8*). Only 6534 tensioning units are needed for the three-and-a-half miles of trestles. Had .192-in. wire been used, as provided in a comparison-alternative design, it would have necessitated the placing, stressing, and anchorage of 116,000 individual strands, which would have cost an estimated $225,000 more than the bar tensioning.

These bars are of a special alloy steel treated by a cold-working process which endows them with amazingly high physical properties. At each end is a specially-designed, long tapered thread engaging with a matching nut, which develops 100 percent of the 145,000 psi guaranteed strength of the bar and provides positive end anchorage. The bar is elongated with a hydraulic jack and the nut is run down to bear against a steel plate which distributes the tremendous terminal forces at a safe unit loading at the extremities of the prestressed-concrete member (*Figure 8*). The bars are made in diameters from ½ in. to 1-⅛ in. and in lengths up to 80 ft; couplers that develop the full guaranteed ultimate strength of the bars are used for greater lengths.

These units are by far the simplest of all the tensioning material used and may be installed before or after the pouring of the concrete and for bonded or unbonded prestressing. Naturally there is considerable economy in coating the bars to prevent bond and placing them in the concrete before pouring, just as is done with ordinary reinforcing steel, but this does not provide as much resistance to unexpected overloads as when the steel is bonded to the concrete by pressure-grouting after prestressing. For this reason, leading prestressed-concrete designers generally use unbonded prestressing for structures on which no overload is anticipated, such as certain roof systems, but utilize the higher safety factor of bond for structures such as heavy-duty bridges, future uses of which may exceed the design loads.

There is a host of construction uses to which Stressteel bars may be put with real economy and efficiency, and building frames constitute one of their most advantageous applications, especially in the framing of structures in which unobstructed space is a necessity.

Prestressing with Stressteel is particularly economical when girders 40 ft or longer are required to frame over such areas. In reinforced concrete the girders would have to be cast in place, using heavy and expensive falsework, but with Stressteel-tensioned concrete the weight is so greatly reduced that they may be precast and prestressed on the ground and lifted into place by cranes normally employed on jobs of this type.

architectural engineering considerations

Many architects and engineers as yet uninitiated in prestressing frequently inquire what types of structures may be designed in prestressed concrete and what is the "best" system to use.

Any structure which may be designed in structural steel or reinforced concrete may also be designed in prestressed concrete, and frequently at a saving in cost—especially when a metallic skeleton must be encased in concrete for enhanced appearance or greater fire resistance.

In the same way that designers have long considered reinforced concrete and structural steel as obvious alternatives for the design of any structure, they must now regard prestressed concrete as a third alternative.

There is no rule-of-thumb that states one structure must be built in this material and another structure in that. Every undertaking is attended by its own specific circumstances. Nor is there a set rule for the selection of any particular method by which to build in prestressed concrete itself. Pretensioning systems, in which the stressing member is tensioned before the concrete is poured around it, differ mainly in their use of different sizes of wire or strand. Post-tensioning systems, apart from the Leonhardt looped-cable and the Preload circular wire-winding methods which employ no special anchorage unit, differ mainly in their use of different bars, wires or strands, and different types of anchorage units. Yet the cost per pound of prestressing steel differs considerably from system to system.

Why not, then, always use the raw material that costs the least? The answer is that the method which employs the least expensive material may not be suitable for the structure at hand or, though suitable, may entail a far higher labor cost for installation of the material.

For example, the Leonhardt looped-cable method costs less than others per pound of prestressing steel in place, but it is applicable only to cast-in-place work; for certain structures this method is more expensive than precasting. On the other hand, anchored stranded cables may in themselves appear costlier than other materials; for certain types of construction, however, they bring compensating economies because their on-site labor costs are low.

The prestressing steel may be in any of the following forms:

(1) Individual wires held by bond alone (pretensioning).

(2) Individual strands held by bond alone (pretensioning).

(3) Wires grouped to form cables and held by a special anchorage and usually by bond as well.

(4) Individual strands held by special end anchorages and sometimes by bond as well.

(5) Strands grouped to form large looped cables held by the loops and usually by bond as well.

(6) High-strength alloy bars with special anchorages and usually bond as well.

It is by no means necessary to prestress every part of a structure. Obviously it is disadvantageous to prestress structural elements which are entirely in compression. Columns, for example, need be prestressed only when they are subjected to sufficient bending to cause tension, or they may sometimes be prestressed to tie them to other parts of the structure by means of the tensioning units.

Where simple spans are involved it is almost always advantageous to prestress girders and beams. If the spans are less than 25 ft and the loads do not exceed 200 psf, prestressing is usually economical when factory-made, pretensioned beams or joists are available in the locality. In this span and load range, depth-to-span ratios of 1:30 to 1:35 are common when the joists are close together, approximately 2 ft on center for a 50 psf loading or side by side for a 200 psf loading.

When spans exceed 25 ft and conventional girder and slab construction is used, the depth-to-span ratios in prestressed concrete compare favorably with those obtained by use of encased steel.

For cast-in-place construction it is desirable to design the floor slab as part of the girders instead of a separate load upon them, thus obtaining a lower depth-to-span ratio.

For lightness of construction and stability of the structure as a whole, the introduction of continuity into prestressed building frames is desirable whenever possible.

The Leoba method appears to be the best for cast-in-place continuous construction. If precasting is preferred, simple span girders may be made and prestressed satisfactorily by individual bar, cable, or strand method or even by pretensioning. These may then be joined to provide full continuity by short lengths of additional prestressing members over the supporting columns. This additional prestressing may be either in the form of horizontal bars or cables in the top of the girder or of "capping" cables or bars curved over the support and anchored underneath the girder on each side.

For live loads only, continuity also may be introduced by use of standard

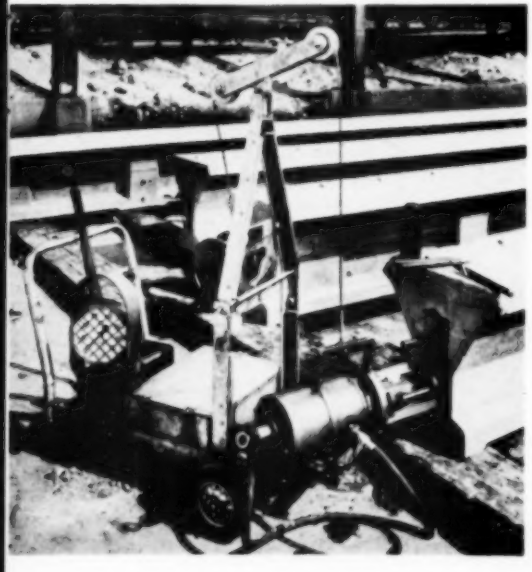
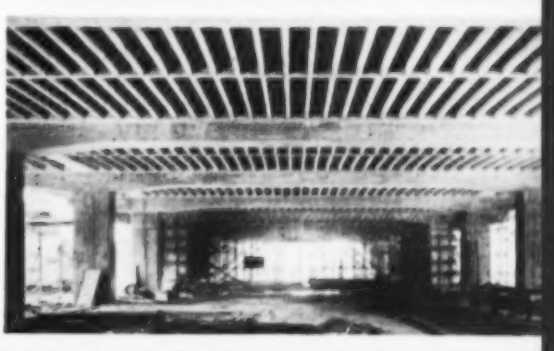


Figure 6—hydraulic jack and pump in position for prestressing a high-strength-steel bar (left).

Figure 7—six-story paper plant, Heidenheim, Germany (above right), *one of the few multistory prestressed-concrete buildings in the world. It was made possible by the use of poured-in-place girders devised for the Leonhardt continuous system of 12-wire cables which minimize friction losses of supports.*

Interior of Heidenheim plant (below right). *Right row of columns rests on rock foundation; left row rests on soft foundation, with hydraulic jacks built into the bases of the columns to compensate for anticipated settlement.*



steel reinforcement in a certain amount of cast-in-place concrete in the upper part of the girder over the supports.

Many variables, such as the type of structure, its location, the amount of prestressing employed, and the method used affect the total bidding price for a cubic yard of prestressed concrete.

A comparison of the bidding prices for quantities of prestressed concrete and reinforced concrete required to perform the identical structural function are shown *(Table 1)*. Totals are inclusive with the concrete made, formed, and placed; the standard steel bent and placed; and the prestressing units made, placed, and tensioned.

Prices for prestressed concrete and reinforced concrete are not always in the proportion shown in the table. Under certain circumstances such as small span, light load, and cast-in-place construction, reinforced concrete will usually be cheaper than prestressed. In other cases, such as some types of large-span bridges, the economies of prestressing will be far more pronounced.

Generally the price of a cubic yard of prestressed concrete should be between $100 and $150; further, it must be remembered that for every two yards of reinforced concrete only about one yard of prestressed concrete is required in an equivalent prestressed concrete structure, and that this cubic yard contains only about one quarter the weight of steel required in the equivalent quantity of reinforced concrete.

When mass-produced precast units are used or large jobs with considerable reuse of forms are involved, the prestressed concrete price may fall below $100 a cubic yard. On small jobs which do not use local contractors or require such expensive extras as the inclusion of design costs and special test beams, the price may rise above $200. Other causes of high prices for prestressed concrete are use of unsuitable prestressing methods and uneconomical design arising from inexperience.

The cost of prestressed concrete consists of the cost of the raw material and the installation cost, which must include the cost of the labor and additional materials required for handling. Thus the fewer the tensioning and anchoring operations and parts required for a given prestressing force, the lower the installation price.

forecast

What is the future of prestressed concrete? It has met each test on a broad front of increasing applications, and it is believed that in another five years every person responsible for the erection of even the most commonplace structure will be familiar enough with this new medium, at least to ask that its suitability for his project be examined. Even so, the rapid evolution of design theories and construction methods emphasizes that prestressing must still be regarded as in its formative period.

While prestressed concrete design is in this stage, to clamp down on it the restrictions of a rigid code of practice would be a severe handicap to its development.

In several European countries, recommended codes of practice for prestressed concrete have been published, and in Germany the seventh revised edition of such a code has appeared within the last year.

The Joint A.S.C.E.-A.C.I. Committee 323 on Prestressed Concrete was formed in 1948 and has since made definite recommendations for prestressed notations and definitions for use in the United States. At the recent Centennial of Engineering, at Chicago last fall, a steering committee was appointed to draft a recommended code of practice for this country. When this code is available it will certainly be of great assistance to architects and engineers, but it should be applied only as a guide and not as a set of restrictive rules imposed on a young and expanding method of construction.

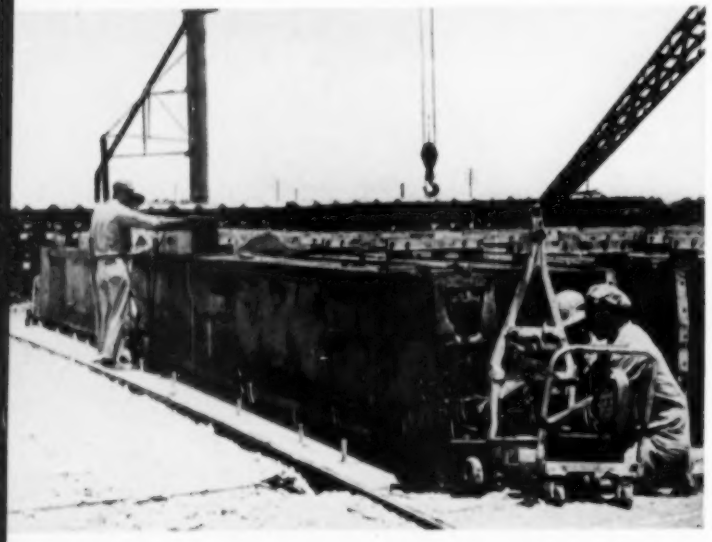


Figure 8—Lower Tampa Bay Bridge, Florida. General view of bare test girder during prestressing operation. Strain gage is set at center of girder.

TABLE 1

prestressed concrete		reinforced concrete	
1 cu yd of 5000 psi concrete @ $50	$50	2 cu yd of 3000 psi concrete @ $45	$90
40 lb standard steel reinforcement @ 20¢	8	400 lb standard steel reinforcement @ 15¢	60
80 lb prestressing steel @ 75¢ (120,000 psi working stress)	60		
Total price	$118		$150

flexible plastic pipe

Johnsonite flexible plastic pipe, a new development for residential radiant heating installations, has successfully passed tests for resistance to hard and chlorinated water, temperature, bacteria, and chemicals, according to the manufacturer. Made of polythylene, the most chemically inert of thermoplastic materials used in the manufacture of pipes, Johnsonite has shown in accelerated aging tests that it has a life expectancy of over 30 years with no sign of wear or loss of working pressure. The pipe, ¾ in. in diameter, is laid over a standard base of 2 in. thick cement which has been covered with aluminum foil. The lines of the pipe are spaced 12 in. apart and are banded to the cement in only a few places. When the system is complete, 2½ to 3 in. of cement is poured over the plastic pipe. Only 12 man hours are required to lay Johnsonite in a 1500 ft area. Temperature checks on homes with Johnsonite Plastic Pipe showed only a 2 degree variation in temperature between the floor and ceiling. Johnson Plastic Corporation, Chagrin Falls, Ohio.

air and temperature control

Dyna-Heat: new window-type packaged room air-conditioning unit provides seven different levels of comfort conditioning including supplementary heat for cool spring and fall days when central heat is not in use. Louver system disperses cool or warm air in any of four directions or in all four directions at once. Mitchell Mfg. Co., 2525 Clybourn Ave., Chicago 14, Ill.

Circle-Air Convection Heating System: low-cost type of convection electric heating, approved by Underwriters' Laboratories, has built-in thermostat in each unit. System employs a "fin" type heating element; Btu ratings from 2400 to 9600; five sizes available from 700 to 2800 w. Paley Mfg. Co., 244 Herkimer St., Brooklyn 16, N. Y.

S-W Unit: new residential air-conditioning unit for year-round use, which provides warm or cool air, does not require dampers, damper controls, or damper motors. Designed for use in new homes or as replacement for present warm-air furnaces; cooling section alone can be supplied for connection with existing warm-air furnaces. Present gas models in 3 and 5 ton capacities on cooling side; minimum heating output of 80,000 Btu/hr. Typhoon Air Conditioning Co., Inc., 794 Union St., Brooklyn 15, N. Y.

construction

Alsynite: translucent fiber glass building panel, in corrugated or flat sheets, for use in commercial and residential greenhouses. Permits transmission of a good balance of light from infra red through ultra violet. According to test report, transmitted light is well diffused; shatterproof. Alsynite Co., of America, 4670 De Soto St., San Diego, Calif.

Armorboard: new high-strength flexible hardboard panel made in ⅛", 3/16", and ¼" thicknesses. Highly shock-resistant panel has most of the physical properties of treated board but sells for same price as standard hardboards. Suitable for underlaying floors, wall paneling, and cabinet work. Anacortes Veneer, Inc., Anacortes, Wash.

Flexa Framing System: new system of all-bolted steel framing for construction and maintenance work includes wide range of concrete inserts, pipe rollers and hangers, clamps, and other fittings. Suitable for tunnel framing, hanging of lighting fixtures, and for general support and racking in heating, plumbing, and air-conditioning. Flexa Steel Products, Inc., 1348 W. Washington Blvd., Chicago 7, Ill.

doors and windows

Reddi-Mount: preassembled cylindrical lock remains in perfect alignment due to its single-unit construction. Other features: free wheeling knob, locking push button in knob, automatic unlocking, 5-pin cylinder, brass latch and solid brass trim with concealed screws. J. Chesler & Sons, Inc., 45-F Varick Ave., Brooklyn 37, N. Y.

Threshold: new door-step threshold, made of abrasive iron and aluminum and also bronze and nickel when permitted, has non-slip surface and beveled edges front and back. Standard widths: 4", 5", and 6" with maximum length of 6'; other widths and lengths to 8'-6" require special patterns. Wooster Products, Inc., Wooster, Ohio.

electrical equipment, lighting

Mobilex: new and flexible system of recessed lighting designed for grid-type suspended ceilings consisting of interlocked "tees" spaced 24" x 24" or 24" x 48" center to center, supporting Fiberglas Ceiling Board. Can be used as single units mounted end to end or mounted side by side. Available in two-, three-, and four-lamp fluorescent arrangements. Day-Brite Lighting, Inc., 5411 Bulwer Ave., St. Louis 7, Mo.

finishers and protectors

Glare-Out: blue-green transparent coating for windows to cut down heat and glare from the sun. One gallon covers up to 400 sq ft and can be applied with a spray gun or mohair paint roller; will not peel, chip, or wash off. Fade-Proof Corp. of America, 3520 N. Spaulding Ave., Chicago 18, Ill.

sanitation, water supply, plumbing

Safe-T-Aire Lamp: new high-intensity ultraviolet lamp for installation in air-conditioning systems which destroys bacteria, viruses, and mold spores; especially useful in food, drug, chemical, and beverage plants, schools, and hospitals. Can be installed in regular air ducts. Hanovia Chemical & Mfg. Co., 100 Chestnut St., Newark, N. J.

specialized equipment

GK-1 Optical Level: new optical level has 4-⅝-in. telescope and quick-coupling device which makes the instrument and its tripod a rigid whole. Bulls-eye level (read through mirror tilted to 45°); clamping screw for ball-and-socket joint takes the place of foot-screws and allows perfect leveling in a few seconds. Paul Reinhart Co., Kern Surveying Instrument Div., 66 Beaver St., New York 4, N. Y.

Paraline: new drafting tool which provides in one instrument T-square, straightedge, triangle, protractor, 1/32-in. scale, and parallel rules. Metal parts incorporated in one section; measures 10¼" x 3-3/16" and requires no attachments or board clamps. Loomis Industries, Box 442, Berkeley 1, Calif.

surfacing materials

Latex-O-Crete: new type industrial flooring material designed purposely to resist chemical action, many acids, oils, solvents, and other floor deteriorants; may be applied directly over old surfaces at average depth of only one-quarter inch. United Laboratories, Inc., 1608 Euclid Ave., Cleveland 12, Ohio.

p/a manufacturers' literature

★ *Editors' Note: Items starred are particularly noteworthy, due to immediate and widespread interest in their contents, to the conciseness and clarity with which information is presented, to announcement of a new, important product, or to some other factor which makes them especially valuable.*

air and temperature control

1-228. Flexicore Split-System of Warm-Air Panel Heating, A.I.A. 4-K, 6-p. folder describing counterflow and single-duct systems that utilize the hollow cores of Flexicore precast concrete slabs to combine the benefits of both circulated air and radiant panel heating and to eliminate their disadvantages. Flexicore slabs act simultaneously as a structural floor, ducts for a circulating warm-air system, and a panel heating unit. Both systems illustrated with two-color diagrams of air-flow and installation details. The Flexicore Co., Inc., 1932 East Monument Ave., Dayton 2, Ohio.

1-229. Gentle Warmth (51652), 8-p. catalog on the Thermo-Base unitized system of air distribution for heating and air conditioning. Comparative installation cost data, installation instructions, comparisons with other types of systems, complete engineering data, rules for application. Illustrated with installation pictures showing the various types of application. Gerwin Industries, 214 Spring St., Michigan City, Ind.

1-230. Modern Practices in Hospital Ventilation, A.I.A. 30-D-1 (1510), 18-p. bulletin explaining general hospital ventilating needs; recommended air changes listed. Photos and drawings of equipment and installations. Ilg Electric Ventilating Co., 2850 N. Crawford Ave., Chicago 41, Ill.

1-231. Low-Cost Modern Heat for Comfortable Living, 4-p. folder listing features of a residential baseboard-heating system. Typical installations illustrated with drawings, photos showing modernization of old homes. Radiant-Ray Radiation, Inc., 900 W. Main St., New Britain, Conn.

construction

3-186. Fireproofing with Perlite, 8-p. revised pamphlet summarizing basic details of 32 approved fire-retardant constructions using lightweight plaster or concrete made with perlite aggregate. Diagrams show required thickness of perlite plaster or concrete, furring details, and other basic elements. Perlite Institute, 10 E. 40 St., New York 16, N. Y.

3-187. Suspended-Ceiling Systems, A.I.A. 39-B-1 (SNU-5), 12-p. brochure giving information and specifications on three types of suspended-ceiling systems. Information also given on Sanymetal E-Z Level Clip which simplifies leveling of suspended ceiling installations. The Sanymetal Products Co., Inc., Suspended Ceilings Div., 2093 E. 19 St., Cleveland 15, Ohio.

3-188. Concrete Floors & Roof Decks, 4-p. folder describing a monolithic one-way concrete plate slab, cast in place, which uses paper tubes as fillers. List of advantages, typical details, specifications, design table, description of procedure in design. Photos, drawings. The Tube Slab Co., 57 Farmington Ave., Hartford 5, Conn.

3-189. Architectural-Grade Weldwood: Construction Details and Specifications, A.I.A. 19-F (1034-5102), 32-p. handbook providing information on the design of interiors using thicker panels of Weldwood plywood. Grades and types, veneer characteristics, panel construction, fireproofing information, panel layouts, specifications. United States Plywood Corp., 55 W. 44 St., New York 18, N. Y.

doors and windows

4-228. Hardware for the Specialized Requirements of Hospitals, 4-p. catalog discussing the features of hardware for use in hospitals. Various types of door locks, automatic exit fixtures, door closers and pulls, friction latches, and locks for instrument, medical, and narcotic cabinets; illustrated by drawings. The American Hardware Corp., P. & F. Corbin Div., New Britain, Conn.

4-229. Marvel-Lift Doors, A.I.A. C-27 and D-16 (CD-1671), 84-p. hard-bound catalog giving detailed information on industrial and residential doors, divided into categories of size. Preparation of industrial and residential openings, details of doors and hardware, auxiliary equipment. Crawford Door Co., 401 St. Jean Ave., Detroit 14, Mich.

4-230. Modernfold Track Switches, A.I.A. 16a (551 SW), 4-p. folder describing track switches for Modernfold doors in residential, commercial, and public buildings. Pivot-switch swings folding door 90° from normal line of travel, glide switch transfers door from one track-line to a secondary track-line, cross-track switch permits two tracks to cross at right angles with through-travel in either direction. Photos, drawings. New Castle Products, New Castle, Ind.

4-231. Window Glazing with Plexiglas, A.I.A. 26-A-1 (PL-23), 16-p. brochure giving Plexiglas solutions to various window glazing problems. Discussion of the advantages of the plastic, list of properties, utility glazing details; photos, drawings. Rohm & Haas Co., Plastics Dept., 222 W. Washington Sq., Philadelphia 5, Pa.

4-232. Doors, Frames, Entrances, 12-p. catalog listing and illustrating architectural aluminum doors and entrances. Narrow-stile entrances with construction details, stock-door units and glass-door frames. Photos of installation in new and modernized buildings. Variety Mfg. & Eng., Co., 810 W. Fulton St., Chicago 7, Ill.

electrical equipment, lighting

5-152. Relays for Industry (1702-A), 12-p. booklet covering complete line of telephone-type relays including hermetically-sealed (in metal and glass containers) subminiature, plug-in, and other types. Informational tables for ordering, list of enclosures for relays. Photos, drawings, charts. Automatic Electric Co., 1033 W. Van Buren St., Chicago 7, Ill.

5-153. Troffers, A.I.A. 31-F2 (T-50), 12-p. brochure describing troffer-type fluorescent lighting fixtures for recessed mounting in acoustical ceilings. Specifications of models, installation data. Drawings, tables. Gruber Bros., Inc., 125 S. 1 St., Brooklyn 11, N. Y.

5-154. Plexiglas for Luminous Ceilings, A.I.A. 31-F-2 (PL-25a), 22-p. booklet illustrated with photos of installations of luminous ceilings in commercial buildings. Advantages of luminous ceilings and diffusing panels, designing of lighting system, case studies. Support details and unit designs. Rohm & Haas Co., 222 W. Washington Sq., Philadelphia 5, Pa.

5-155. New Achievement in Industrial Lighting (600A), 4-p folder describing new industrial slimline lighting unit which has an over-all efficiency of over 90% and uplighting of more than 20%. List of features, dimensional data on parts and accessories, ordering information. Photos, table, drawings. A. L. Smith Iron Co., Smithcraft Lighting Div., Chelsea 50, Mass.

finishers and protectors

6-87. Exterior Finishes for Redwood (4B3-1), 4-p. bulletin with 2-p. supplement discussing paint, stain, clear finishes, stain and clear combinations, and bleaches for exterior redwood construction. Color charts, table of uses of redwood finishes. Supplement: list of finish systems recommended by manufacturers for outdoor use on redwood. California Redwood Assn., 576 Sacramento St., San Francisco 11, Calif.

6-88. Protect the Weather Side of Your Building with Dehydratine No. 22, 4-p. folder explaining the six functions of a silicone-base water-repellent for use on concrete, stucco, and masonry. Specifications, photos. A. C. Horn Co., Inc., 10 St. and 44 Ave., Long Island City 1, N. Y.

Two 4-p. brochures describing a nonporous, elastic rust-preventive coating for interior and exterior metal surfaces in industrial plants and commercial buildings. Summary of performance test data, color and covering capacity data; photos, cutaways. L. Sonneborn Sons, Inc., Building Products Div., 80 8 Ave., New York 11, N. Y.:

6-89. Sure Rust Prevention

6-90. Painting—Rust Preventive Coating, A.I.A. 25-B-33, 25-B-241 (BP4621)

6-91. Maintenance Painting Guide (257-CFP-NS), 4-p. guide to specialized maintenance coatings for problems of rust, dampness, chemical corrosion, painting odors, and fumes. Descriptions of coatings for use over metal, concrete, wet wall, fresh plaster, and exterior masonry and wood surfaces. Quick reference index. The Wilbur & Williams Co., 130 Lincoln St., Boston 35, Mass.

insulation (thermal, acoustic)

Two 4-p. folders describing three thermal and acoustical insulating materials. First discusses the physical properties of all three materials and points out the qualities they have in common, including their principal uses, ease of application, and choice of facings available with each. Second describes in greater detail the physical properties, principal uses, handling characteristics, thermal conductivity, and acoustical efficiency of one of the materials. Made of extremely fine, blown-glass fibers. Photos and tables. Gustin-Bacon Mfg. Co., 210 W. 10 St., Kansas City, Mo.:

9-90. A Complete Line of Glass Fiber Acoustical Insulations

9-91 Ultrafine

sanitation, water supply, plumbing

19-328. Donley Incinerators, 2-p. leaflet. Receiving hopper door and flue sizes, sizes and installation information on incinerator available in flue-fed models, floor-fed, industrial, garden or estate models, and prefab steel shell units. Also information on gas burner for use in medium-sized incinerators in homes, apartments, schools, stores, and hospitals. The Donley Bros., Co., 13900 Miles Ave., Cleveland 5, Ohio.

19-329. Electro-Drain: Automatic Sanitary Garbage Disposer (K-6318-P), 2-p. data sheet listing special features of automatic garbage disposal unit fitting any sink with $3\frac{1}{2}$" to 4" opening. Operating instructions, specifications, and installation data. Photo, cutaways. Nash-Kelvinator Corp., Kelvinator Div., 14250 Plymouth Road, Detroit, Mich.

19-330. Solid Olsonite Seats, A.I.A. 29-H-22 (SCS-8), 62-p. catalog covering complete line of solid-plastic toilet seats. Color charts, specifications, shipping weights, maintenance and cleaning instructions, government specifications. Photos, drawings. Swedish Crucible Steel Co., Plastic Div., 8561 Butler Ave., Detroit 11, Mich.

19-331. Triangle Plastic Pipe, 16-p. brochure on four types of plastic pipe: flexible, semirigid, rigid high-impact, and rigid polyvinyl chloride. Detailed tables of chemical and physical characteristics of each type; advantages of using plastic pipe and directions for installing and joining the pipe. Photos, charts. Triangle Conduit and Cable Co., Inc., Plastic Products Div., 1920 Jersey Ave., New Brunswick, N. J.

specialized equipment

19-332. Extension Drawer Support, A.I.A. 27-C, 4-p. booklet listing features of extension drawer support. Details, installation instructions, specifications; photos and drawings. The Extension Drawer Support Co., 2319 W. Washington Blvd., Los Angeles 18, Calif.

Two catalogs describing a chalkboard-setting system and adjustable storage racks, respectively. Descriptions, drawings, and specifications of aluminum ground and trim for both recessed and surface-applied types of chalkboard installations with chalk troughs, map rails, and other accessories. List of advantages of adjustable storage racks for materials in long lengths such as metal mouldings, tubing, and pipe. Loxit Systems, Inc., 1217 W. Washington Blvd., Chicago 7, Ill.:

19-333. Loxit Chalkboard Setting System, A.I.A. 35-B-11 (BB)

19-334. Loxit Adjustable Storage Rack, A.I.A. 35-i-15 (R)

★ **19-335. Time Is a Priceless Element,** A.I.A. 32c (938). Folio containing pamphlets on time recording and signalling devices, synchronous motor-control clocks, and program machines; available in single units or complete central-control systems. Photos, details, and specification data. The Cincinnati Time Recorder Co., 1733 Central Ave., Cincinnati 14, Ohio.

surfacing materials

19-336. Ceramic Tile Adhesive No. 10, 4-p. folder describing a method of installing clay-tile walls and flooring either in new construction or for remodeling purposes. List of advantages of the material over conventional tiling methods. Specifications on surface and tile preparation, wall and floor tile installations, cleanup methods, and correct grouting procedure. Minnesota Mining and Mfg. Co., 411 Piquette Ave., Detroit 2, Mich.

19-337. Panelyte Plastic Beauty (252), 8-p. brochure illustrating residential and commercial uses of a laminated plastic surfacing material. Color chart and photos. Description of sizes, grains, and finishes. Instructions for veneering, fabricating, and applying the material. St. Regis Paper Co., Panelyte Div., 230 Park Ave., New York 17, N. Y.

19-338. Counter Magic for Your Kitchen (4268), 4-p. folder covering four types of surface materials for standard-base kitchen cabinets: Formica, vinyl plastic, linoleum, and edge-grain maple; 17 patterns or colors. Color photos. Youngstown Kitchens, Mullins Mfg. Corp., Warren, Ohio.

(To obtain literature, coupon must be used by 4/1/53.)

(We request students to send their inquiries directly to the manufacturers.)

PROGRESSIVE ARCHITECTURE, 330 West 42nd Street, New York 36, N. Y.
I should like a copy of each piece of Manufacturers' Literature circled below.

1-228	1-229	1-230	1-231	3-186	3-187	3-188	3-189
4-228	4-229	4-230	4-231	4-232	5-152	5-153	5-154
5-155	6-87	6-88	6-89	6-90	6-91	9-90	9-91
19-328	19-329	19-330	19-331	19-332	19-333	19-334	19-335
19-336	19-337	19-338					

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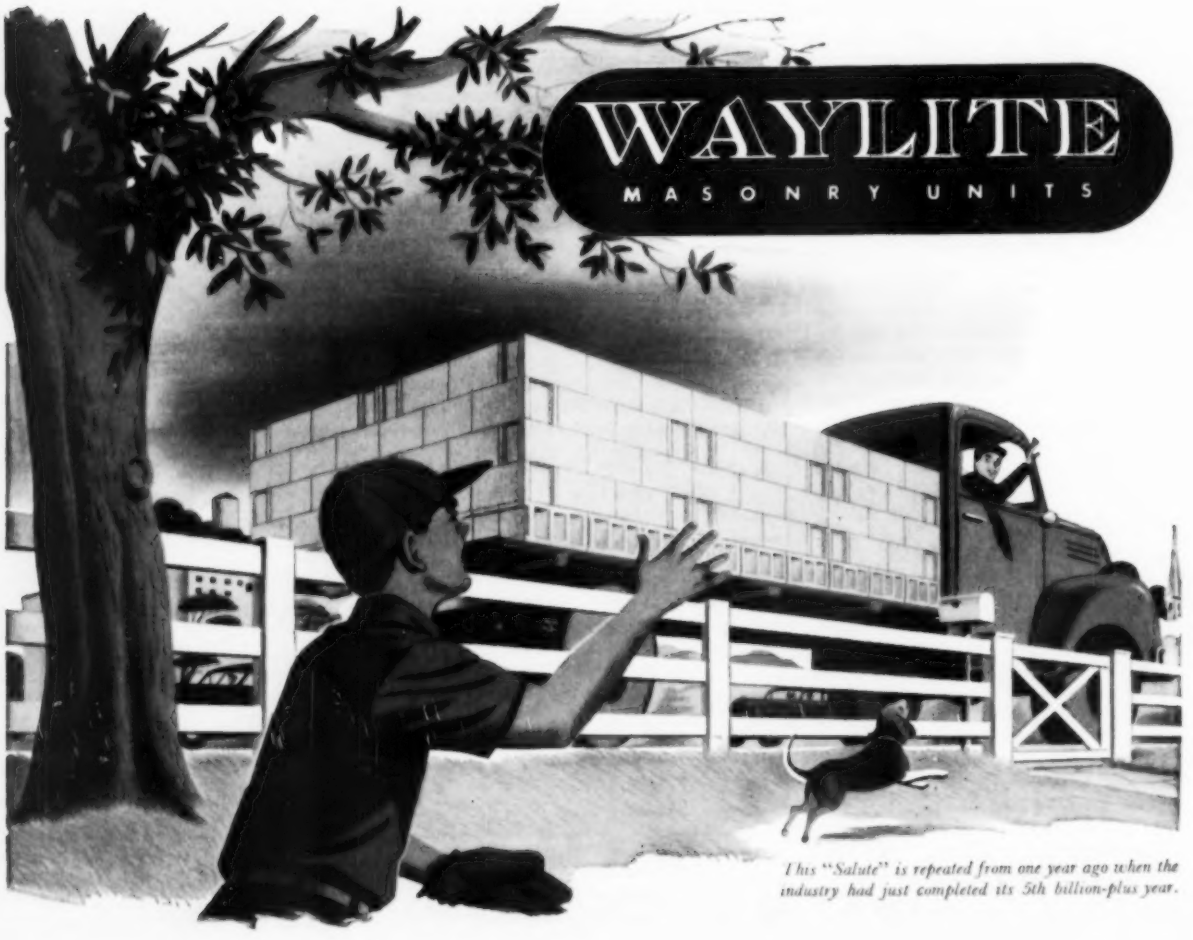
2/53

A SALUTE TO THE Concrete Masonry Industry

ON ITS SIXTH SUCCESSIVE BILLION-PLUS YEAR

The remarkable record of the Concrete Masonry Industry during the past six years in producing the equivalent of over Six Billion sq. ft. of 8" Masonry Wall Units has few parallels in building industry history. . . . This production has been equal to about two-thirds of all masonry walls built in the United States during this period. . . . This unprecedented growth of the Concrete Masonry Industry has been the direct result of the quality, utility and economy of concrete masonry walls, and the superior service of progressive locally-owned companies. . . . The Waylite Company is proud to be a part of such an outstanding industry in the construction field, and this seemed to be a good time to say so. . . .



This "Salute" is repeated from one year ago when the industry had just completed its 5th billion-plus year.

by Ben John Small

spec small talk

round table discussion

During a recent panel discussion on "What Specifications Mean to Me," at the opening meeting of the Metropolitan Chapter (N. Y.) of the Construction Specifications Institute, an architect, a contractor, and an architect's field supervisor discussed the theme. The architect said, "a blasted nuisance," the contractor said, "say it right and I'll bid it right," the supervisor said "write it fairly and stress performance objectives rather than flyspecking." The architect's remark was made to dramatize his serious approach. He knew perfectly well that the specifications constitute one of the four elements comprising the Contract Documents. He even stated he "liked" writing them together with his job captain as a means of reviewing his design decisions and as a means toward a better evaluation of the technical proficiency of his men. In a sense he felt the specifications could be viewed frequently as a teaching medium. Bless him. The contractor said he was puzzled. He exhibited three different Concrete Sections. One section had 2½ pages, the second 8 pages and the third 20 pages. The only thing they had in common was the almost identical dollar value of the concrete work. He said the 20-pager produced no better concrete than the two other specifications. He never read it through when a sampling indicated a verbatim repetition from known standards; his superintendent skimmed through it for salient points only, such as compressive strength, slump, finishes, etc., his foreman does not read too well. The 8-pager combined performance objectives with mixes and methods spelled out in detail; one contradicting the other. While not an admirer of brevity for its own sake he found the 2½-pager a succinct performance, descriptive, adequate for the intended purpose.

it's the law

It seems to me that legal problems pertaining to the proper construction of buildings too often stem from the improper construction of specification sentences.

cardiarchitecture

I regret never studying anatomy. I just about appreciated the function of a heart-saver contour chair when along comes a recent magazine article entitled "Heart-Saver Kitchen." What next, a rump-saving rumpus room?

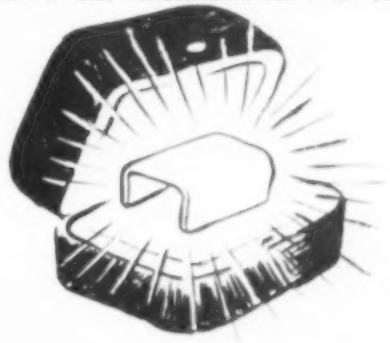
aluminum reefer

For more years than I care to remember I have been told—particularly by manufacturers of aluminum windows—that one could not weld aluminum successfully. In the Alcoa Aluminum News-Letter (August 1952), we came upon the following:

"Foster Refrigerator Corporation was the first to recognize the inherent advantages of aluminum: its light weight, resistance to corrosion, high reflectivity to radiant heat, resistance to chemicals, nontoxicity. The young company solved its technical problems and began building quality refrigerators and freezers for hospitals, schools, institutions, industries and farms. Now it proudly lays claim to the fact that it's the largest manufacturer of welded all-aluminum refrigerators in the business. Standards meet all requirements of government and military forces. Refrigerators feature all-welded construction, heavy-duty, sag-proof aluminum shelves, overlap doors, heavy-density insulation, and a choice of white Dulux or processed natural aluminum finishes."

I bristled at the thought that I had been misled and asked Foster to come in and tell his story. He explained that originally his problems were to select an aluminum alloy strong enough for world-wide shipment, one that would withstand hard and constant use under all conditions and would not pit, fungus, corrode, or turn black; to develop the production "know-how" and technique of welding aluminum alloy throughout the entire refrigerator; to produce a gleaming, "peel-proof," white Dulux finish on aluminum. And to develop a colorless easy-to-clean finish for natural aluminum that would minimize fingermarks.

Pressing for data on welding of light-gage aluminum he took out of his pocket, believe it or not, a velvet-lined jewel case in which lay resplendently an aluminum typical corner section of his refrigerators. The outer surface appeared as monolithic as a billiard ball. The inner surface revealed an appendectomy-like scar produced by welding. The welding is of the tungsten-arc type which utilizes a metal arc, a tungsten electrode, and an inert gas envelope. This method requires no welding flux consequently no cleaning operations are required subsequent to welding and no flux contamination can occur. In welding aluminum an a.c. arc in argon gas is used. The argon atmosphere protects both the tungsten electrode and the aluminum being welded. He went on to say that his reefers were one-half lighter than those of other metals resulting in lower freight and installation costs and greater mobility; that by actual test a weight dropped from equal heights on equal thicknesses of aluminum and other metals dented both metals with no appreciable difference in size or depth of dent.



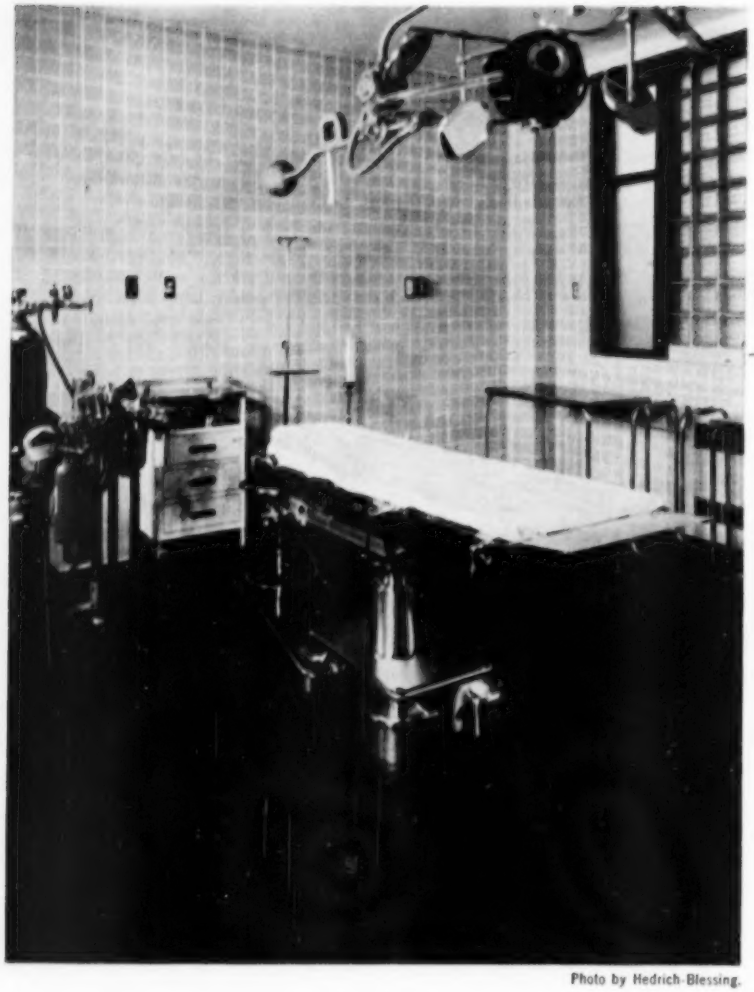
I asked him why in the first place did he select such a seemingly difficult material to work with. He stated he was attracted to certain important properties of aluminum such as rot and corrosion proofness, high reflectivity to radiant heat, chemical resistance, nontoxicity, nonsparking and nonmagnetic characteristics, and low cost. (Note to deep freeze donors: are you paying attention?)

streamlining

Federalese, the term used to describe the tortuous terminology in which bureaucratic directives are written, knuckled under to plain English when a New York City plumber wrote to the Bureau of Standards that he had found hydrochloric acid good for cleaning out clogged drain pipes. The Bureau's response was, "The efficacy of hydrochloric acid is indisputable, but the corrosive residue is incompatible with metallic permanence." The plumber wrote back he was glad the Bureau agreed with him.

To which the Bureau replied, "We cannot assume responsibility for the production of toxic and noxious residue with hydrochloric acid and suggest you use an alternative procedure." By return mail, the plumber told how glad he was the Government thought his idea was O.K.

In desperation, the Bureau broke down and wrote the plumber in plain Anglo-Saxon language, "Don't use hydrochloric acid. It eats hell out of the pipes."



Operating Room, Misericordia Hospital Addition, Milwaukee, Wisconsin. Floor: Pattern No. 1778-A3, 1⅛" x 1⅛" x ¼" neutral warm brown Conductive Floor Tile. Wainscot: 4¼" x 4¼" wall tile and trim, Color No. 302, Harmonitone warm gray. Brust & Brust, Architects. Stark Mantel & Tile Company, Tile Contractor.

Photo by Hedrich-Blessing.

Mosaic Conductive* Floor Tile

for hospital anesthetizing locations

safe
sanitary
easy-to-clean
permanent

The Mosaic Tile Company's Electrically Conductive Vitreous Ceramic Mosaic Floor Tile meets N.F.P.A. No. 56, "Recommended Safe Practice for Hospital Operating Rooms."

WHERE USED: Recommended for all anesthetizing locations in surgical and obstetrical suites.

WHAT IT DOES: Mosaic Conductive Floor Tile dissipates static electricity, prevents the accumulation of dangerous electrostatic charges by providing moderate conductivity between persons and conductive equipment in contact with the floor.

HOW INSTALLED:

In new construction, the setting bed (minimum thickness 1") consists of a mixture of mechanically mixed and pulverized Acetylene Carbon Black and Portland Cement, mixed with sand.

For alterations without structural changes, a thin setting bed method has been developed (raises existing floor line approximately 5/16"). Special mastics with the required electrically conductive properties are available. In both setting methods joints are composed of waterproofed Gray Portland Cement.

For detailed information on **Mosaic Conductive Floor Tile,** see your nearest Mosaic representative, or write Dept. 28-13, The Mosaic Tile Company, Zanesville, Ohio.

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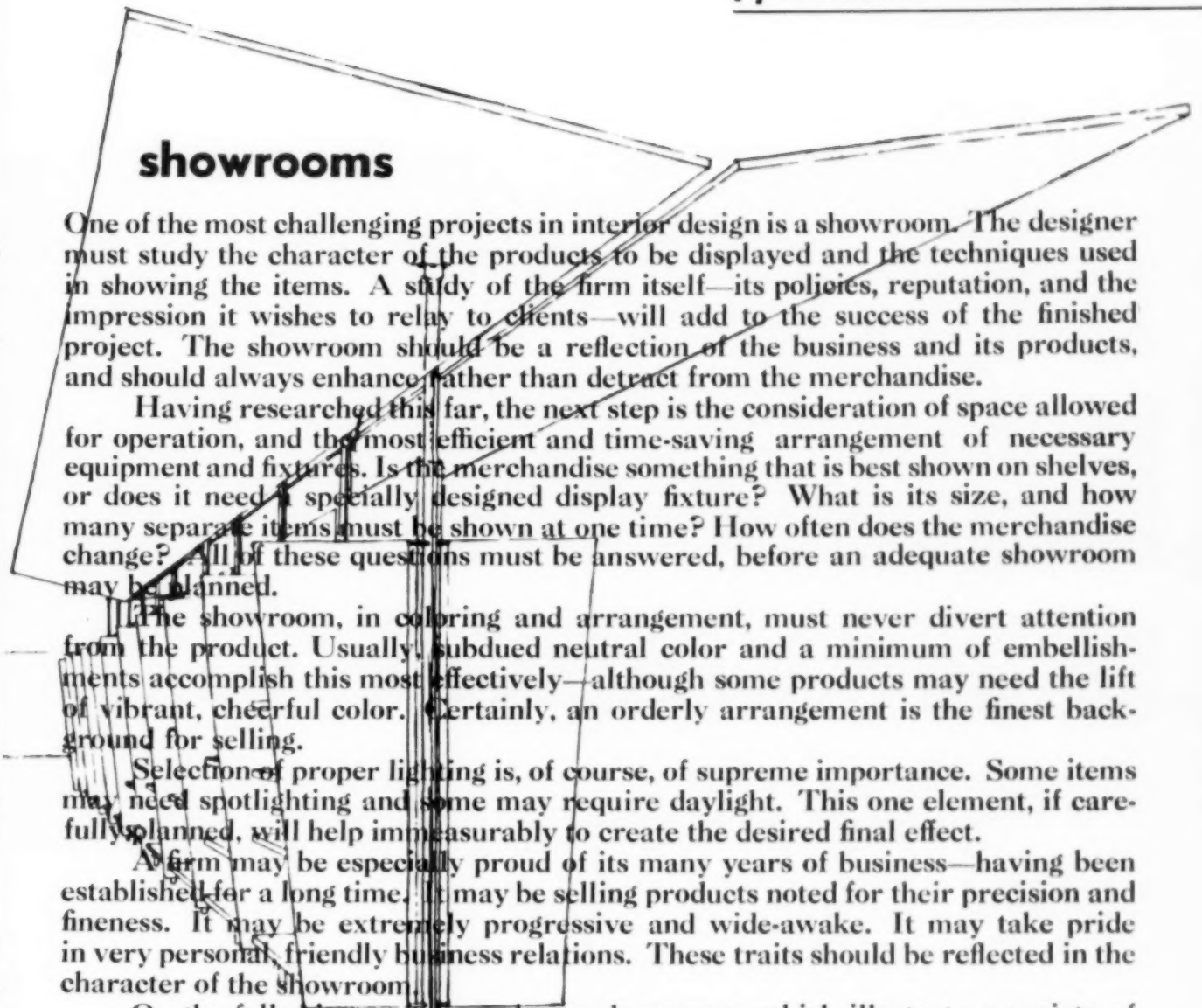


showrooms

One of the most challenging projects in interior design is a showroom. The designer must study the character of the products to be displayed and the techniques used in showing the items. A study of the firm itself—its policies, reputation, and the impression it wishes to relay to clients—will add to the success of the finished project. The showroom should be a reflection of the business and its products, and should always enhance, rather than detract from the merchandise.

Having researched this far, the next step is the consideration of space allowed for operation, and the most efficient and time-saving arrangement of necessary equipment and fixtures. Is the merchandise something that is best shown on shelves, or does it need a specially designed display fixture? What is its size, and how many separate items must be shown at one time? How often does the merchandise change? All of these questions must be answered, before an adequate showroom may be planned.

The showroom, in coloring and arrangement, must never divert attention from the product. Usually, subdued neutral color and a minimum of embellishments accomplish this most effectively—although some products may need the lift of vibrant, cheerful color. Certainly, an orderly arrangement is the finest background for selling.

Selection of proper lighting is, of course, of supreme importance. Some items may need spotlighting and some may require daylight. This one element, if carefully planned, will help immeasurably to create the desired final effect.

A firm may be especially proud of its many years of business—having been established for a long time. It may be selling products noted for their precision and fineness. It may be extremely progressive and wide-awake. It may take pride in very personal, friendly business relations. These traits should be reflected in the character of the showroom.

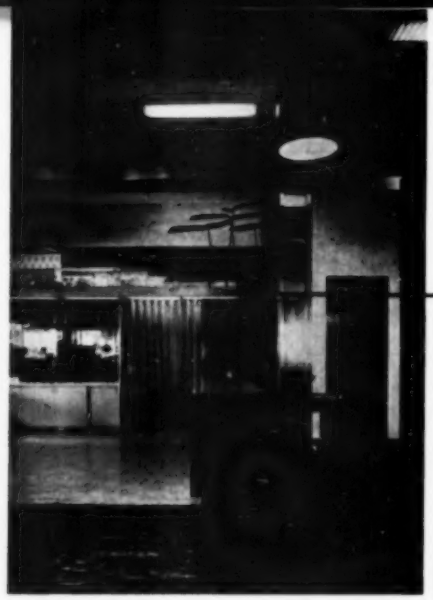
On the following pages are shown showrooms which illustrate a variety of approaches to design. Particularly interesting are the two completely different approaches to showrooms with identical (Aloe) products. In the first example, the architect has decided to make his building materials the same in character and coloring as the products, to accomplish a unified whole. The second treatment has an orderly, attractive appearance created with light colors and use of occasional red accents for sparkle.

The third, a fabric showroom is particularly good because of the specially designed fixtures used for storing and displaying heavy bolts of fabric, fabric swatches, and drawings in the most facile manner. The fourth, for a company that sells a great number of small decorative accessories, is also beautifully executed, with fixtures easily adjustable to changing displays.

The designers of all four showrooms have had entirely different spaces with entirely different considerations—and have solved their problems well.

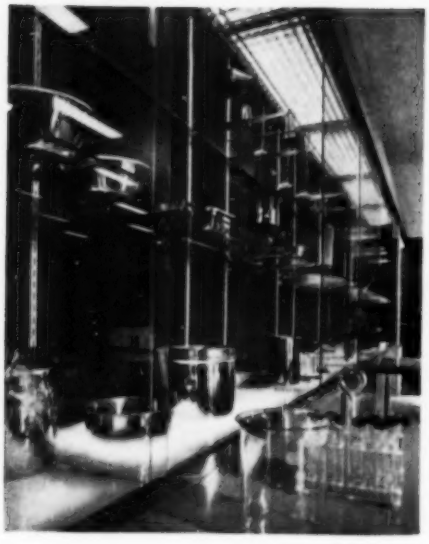
showrooms

client	A. S. Aloe Company
location	Los Angeles, California
architect	Richard J. Neutra



mural

accent light



glass shelves

data

• **cabinet work**

Cases: H. D. Cowan Co., 2828 Whittier Blvd., Los Angeles 23, Calif.

• **doors and windows**

Doors: flush-slab, hollow-core. **Hardware:** Schlage, Bayshore & Blanken Ave., San Francisco, Calif.

Windows: The Kawneer Co., 714 N. Front St., Niles, Mich./ **glass:** Libbey-Owens-Ford Glass Co., Room 1038-T, Nicholas Bldg., Toledo, Ohio and Mississippi Glass Co., 88 Angelica St., St. Louis, Mo.

• **furnishings and fabrics**

Chairs and Tables: designed by architect/ executed by Fred T. Epping, 11163 La Grange, Los Angeles 25, Calif.

Chair Upholstery: #5420 color 60A, Grain GA Duran plastic.

Table Tops: #1004 gray Formica/ Mortimer & Wulff, 1943 Glendale Blvd., Los Angeles 26, Calif.

• **lighting**

All Lighting: designed by architect/ executed by Wagner-Woodruff Co., 830 S. Olive St., Los Angeles 14, Calif.

• **walls, ceiling, flooring**

Walls: "Flexwood"/ flexible veneer wall covering/ U.S. Plywood Corp., 55 West 44 St., New York, N.Y./ "Marlite" panels/ Davidson Plywood & Lumber Co., Los Angeles, Calif.

Mural: 60-foot/ designed by architect/ executed by Hans Mangelsdorf, 8560 Walnut Drive, Los Angeles, Calif.

Acoustic Tile: "Auditone"/ U.S. Gypsum Co., 300 W. Adams St., Chicago 6, Ill.

Asphalt Tile: "Kentile"/ #D-247 Travertine and #B-204 Grand Antique/ David E. Kennedy Inc., 58 Second Ave., Brooklyn, N.Y.

A sixty foot mural in the principal showroom of this building depicts the sub-tropical hospital overlooking a bay of blue-green ocean, a shore of palms, and Henri Rousseau vegetation. It serves for the main color feature and also as an expression of the company's interest in the development of health facilities in California, the Pacific area, and all countries of clement climate which are increasingly engaged in a program of health service. The only other color accent is in the golden draperies—conceived to form a restrained background and foil for shining laboratory appliances, surgery tables, sun lamps, and the company's metal and black-and-white enamel apparatus.

The designer's approach to this showroom has been exemplary. Firstly, he very carefully studied the products to be shown. Finding that their ingenious design and utility allowed them to stand alone, with no need of embellishment, Neutra's first consideration was a clear, uncluttered presentation.

Shelving is inconspicuous, and lighting above and below enhances the shape and material qualities of the equipment. Other merchandise is exhibited alone, with no display medium, but the surroundings are sympathetic to the shapes and materials of the exhibits. Principal interior materials—plate glass, metals like electrolytically finished aluminum and stainless steel—all have been used as inconspicuous yet flattering settings. *Photos: Julius Shulman*

p/a interior design data

showrooms

client	A. S. Aloe Company
location	Minneapolis, Minnesota
architects	Thorshov & Cerny, Inc.
interior designer	Newton Griffin

laminated-plywood steel

asphalt-tile flooring

data

• cabinet work

Showcases and Island Displays: natural birch with light finish tops of #30 Armstrong's blue linoleum, #893 grey Micarta or plate-glass/ shelves of polished plate-glass/ lining blue velvet/ designed by Richard J. Neutra/ developed by A. S. Aloe's California office/ L. Paulle Midway Co., St. Paul, Minn.

Wood Finish: #17 GD/ Pratt & Lambert.

• doors and windows

Wooden Doors: 1¾" hollow core/ flush birch/ Paine Lumber Co., Oshkosh, Wis.

Door Hardware: dull-chrome finish/ Schlage, Bayshore & Blenken Ave., San Francisco, Calif./ Norton Door Closer Co., Berrien Springs, Mich./ The Stanley Works, 195 Lake Ave., New Britain, Conn.

Windows: ¼" polished plate, aluminum fixed/ Pittsburgh Plate Glass Co., 2108 A Grant Bldg., Pittsburgh 19, Pa. Hope's Windows, Inc., Jamestown, N.Y.

• equipment

Screens: between sales displays/ birch plywood/ architect-designed.

• furnishings and fabrics

Chair: #DCM/ molded plywood/ designed by Charles Eames/ Herman Miller Furniture Co., Inc., Zeeland, Mich.

Stool: laminated birch plywood legs/ blue Duran upholstered seat/ Thonet Industries, Inc., One Park Ave., New York 16, N.Y.

• lighting

Recessed Incandescent Fixtures: Elco Products, Cleveland, Ohio.

Neon Tube in Cove: General Electric Co., Schenectady 5, N.Y.

• walls, ceiling, flooring

Walls: painted plaster, paint, Glidden Co., New York, N.Y.

Ceiling: furred plaster/ U.S. Gypsum Co., 300 W. Adams St., Chicago 6, Ill. /**paint:** #E-2 yellow, Glidden Co.

Acoustic Plaster: Zonolite Co., 135 S. LaSalle St., Chicago 3, Ill.

Asphalt Tile: #8-211 black, red, and white/ Tile-Tex Division, Flintkote Co., Chicago Heights, Ill.

Design of this showroom has created an atmosphere of cleanliness, reinforcing the quality of medical supplies displayed. Colors are warm and clear, in contrast to the large black area of the tile flooring and the expanses of natural birch woodwork. Basic values of grey, yellow, and blue (the company colors used in printed catalogues, bulletins, etc.) in the walls, cabinets, and ceiling are accented with red-painted columns and flecks of red in the floor tiles—welcome relief from the building's former combination of golden-oak woodwork and buff paint.

This showroom is unique in its placement in the building. An open vista of the entire office-display section is provided on a busy street in close proximity to potential customers. It is also an effective spotlighted night display. Office space is near the showroom, for convenient supervision and operation in placing orders.

Photos: Allen Downs

client	United Merchants and Manufacturers, Inc.
location	New York, New York
associated architects	S. Brian Baylinson and Frank A. Faillace

data

• cabinet work

All Fixtures: designed by architects/ manufactured and installed by Juno Woodworking Co., 58-85 58 Ave., Maspeth, L.I.

• furnishings and fabrics

Chairs and all Seating: custom and stock/ H. S. Clifton Co., 236 E. 59 St., New York, N.Y.

Tables: designed by architects/ executed by Juno Woodworking Co.

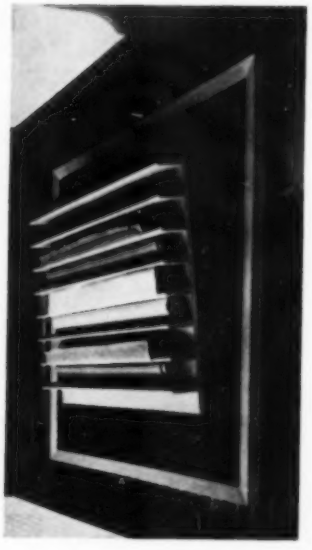
• lighting

Eggcrate Ceiling: Marlou Lights, Fanwood, New Jersey/ standard fluorescent strip/ Sylvania Electric Products Co., Inc., 1940 Broadway, New York, N.Y.

• walls, ceiling, flooring

Walls and Ceiling: painted plaster/ Pratt & Lambert Paints, Inc., 33-01 38 Ave., Long Island City, N.Y./ **fireproof-oak partitioning**: Juno Woodworking Co.

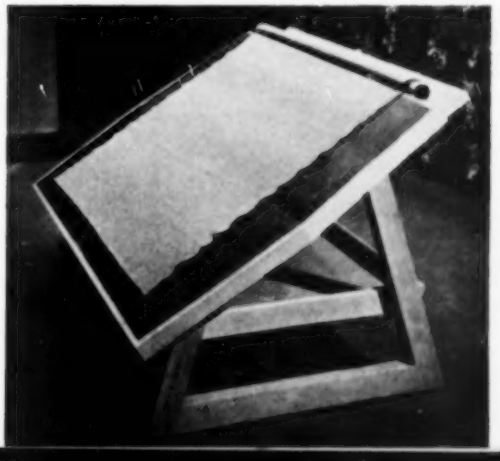
Floor Covering: #1402 "Grospoint," cedar woolen carpeting/ Bigelow Carpet Co., 140 Madison Ave., New York, N.Y.



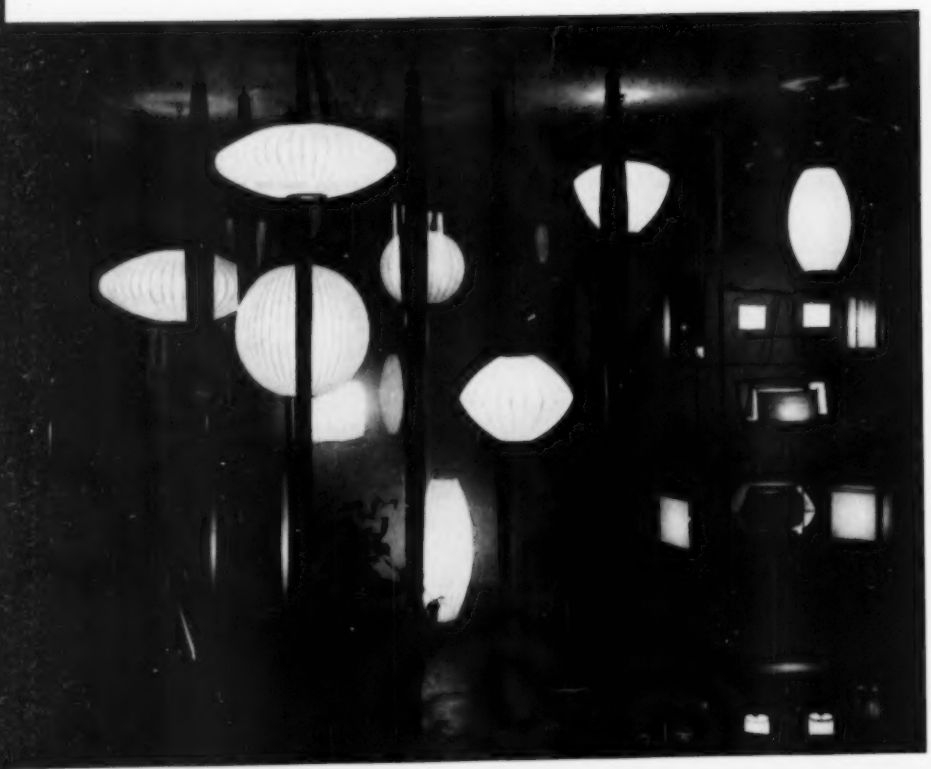
Correct exhibition, storage, and display of fabrics were the problems of these designers. Fabrics are shown to customers in bolts, sample lengths, swatches, and drawings. The tables can handle all of these situations. Bolts of fabric are usually the most difficult to handle, but tables have been designed to control these.

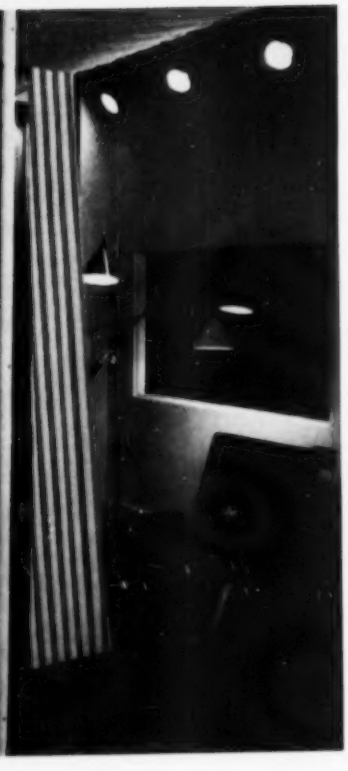
Storage space has been hidden, so that there is no distraction to customers, and an organized filing system has been set up.

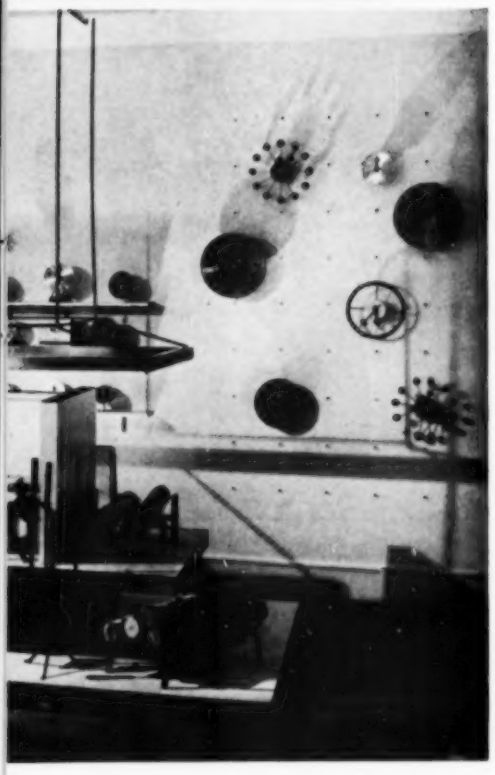
All wall color and carpet make a neutral setting as background for fabrics displayed. *Photos: Alexandre Georges*



showrooms







data

cabinet work

Showcase Metalwork: Beacon Artisans, Inc., 333 E. 26 St., New York, N.Y./ Spanish Arts Ornamental Iron Works, Inc., 164 Mulberry St., New York, N.Y.

Wooden Display Fixtures: Walter P. Sauer & Sons Co., 30-28 Starr Ave., Long Island City, N.Y./ Manuel Contracting Co., 505 Fifth Ave., New York, N.Y.

Display Platforms: Post Displays, 11 Frankfort St., New York, N.Y.

Space Dividers: lacquered stock hollow-core doors on horizontal angle irons, mounted on vertical supports/ Walter P. Sauer & Sons Co., 30-28 Starr Ave., Long Island City, N.Y.

doors and windows

Doors: unchanged (leased area).

Window Treatment: white metal Venetian blinds/ Davey and Thomann, 101 Park Ave., New York, N.Y./ curtain fabric: white nylon net/ R. J. Ederer Co., 540 N. Orleans St., Chicago, Ill. /bleached Habutai silk: Arundell Clarke, 25 E. 73 St., New York, N.Y.

Side Chairs: designed by Ernest Race/ Waldron Assoc., 1230 Second Ave., New York, N.Y./ upholstery: red plastic fireproof fabric/ Rafael Fabrics, Chicago, Ill.

Duck Fabric: white, for suspended ceilings/ Dazian's Inc., 142 W. 44 St., New York, N.Y.

Striped Denim: toast-and-white/ Greeff Fabrics, 4 E. 53 St., New York, N.Y.

lighting

Ceiling Fixtures: #1904/ movable twist-on-fixture with universal swivel joint/ General Lighting Co., Inc., 1527 Charlotte St., New York, N.Y.

Reflectors: #3301/ lighting glass shelves/ incandescent strips with tubular lamps/ Garden City Plating & Mfg. Co., 1750 N. Ashland Ave., Chicago, Ill.

Track for Ceiling Fixtures: exposed/ mounted against plaster surface/ Bull-dog Electric Products Co., Detroit, Mich.

walls, ceiling, flooring

Walls and ceiling: painted plaster.

Flooring: asphalt tile/ #E-387/ buckskin taupe/ Armstrong Cork Co., Lancaster, Pa.

client	Richards Morgenthau
location	New York, New York
interior designer	Edward Wormley
associate	Edward Crouse

Particularly interesting is this showroom, leased in a general wholesale showroom building. Several considerations determined the program of trying to make an uncluttered display area: (1) no major structural changes were to be made in the area as it existed; (2) some display fixtures on hand were to be used; and (3) a flexible arrangement was needed to accommodate literally thousands of household decorative accessories, subdivided into many different manufacturer's "lines" which change in size and quantity.

The free-standing partitions are an excellent solution. The designer created a false perspective by their placement and insisted that they be kept clear of display. The six center tables also graduate to this false vanishing point. The ceiling was left unchanged except for the addition of canvas strips, strung over the lamp display area, and traverse tracks which carry spotlights to any desired area.

The display fixtures—plate glass shelves on metal hangers—are particularly good in their simplicity of design and complete unobtrusiveness.

All walls have been painted white, and the only color is on the solid areas of the wooden space dividers. *Photos: G. Barrows*

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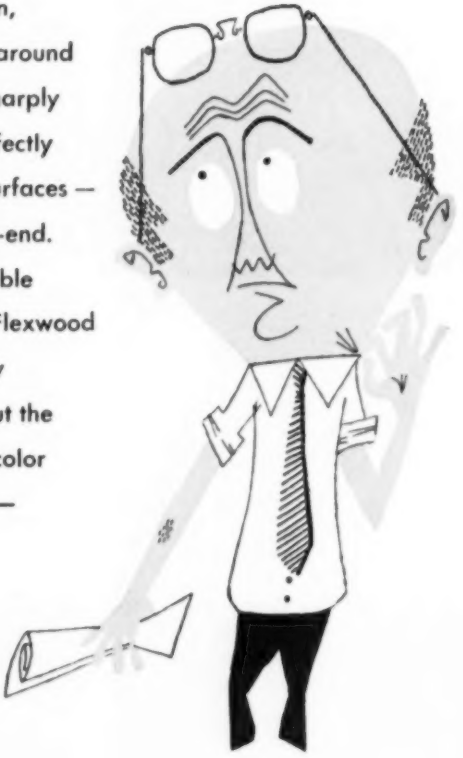

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55 West 44th Street, New York 36, N. Y.
In Canada: Paul Collet & Co., Ltd., Montreal

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NAME_____

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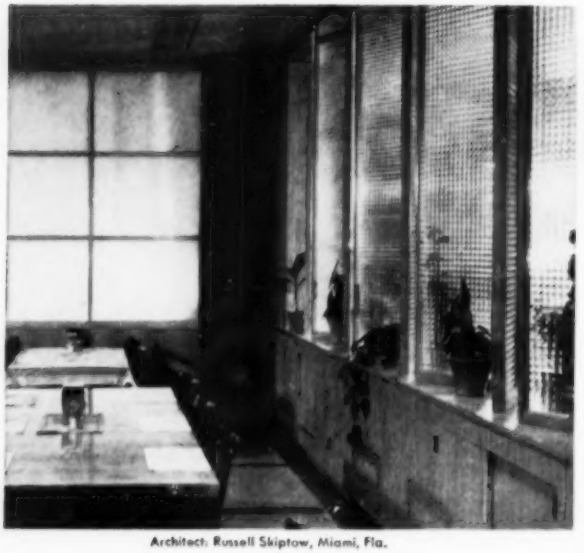
Dining Group: #6140, 5-foot Dining table/ glass top enmeshed with diamond wire design, wrought-iron base/ **retail:** $119.50; #6160 Armchair/ **retail:** $45; #6150 Side chair/ **retail:** $42.50; #6100 and #6101 Server and top/ shelves of glass and marlite/ **retail:** $99.50 and $69.50/ designed by Paul McCobb/ **B. G. Mesberg National Sales, 201 E. 57 St., New York, N.Y.**

Indoor-Outdoor Furniture: #6590 Daybed/ foam-rubber upholstery, wrought-iron base/ **retail:** $198.50; #6570 canvas-sling chair/ **retail:** $30; #6210, 20" square perforated-metal table/ **retail:** $14; #1305 Ottoman/ **retail:** $19.95; #6512 Cocktail table/ 60" long, opaque white-glass top/ **retail:** $89.50/ upholstery by Customcraft, Inc./ designed by Paul McCobb/ **B. G. Mesberg National Sales, 201 E. 57 St., New York, N.Y.**

Wrought-Iron Furniture:/ #6500 Rolling server and buffet with black, gray and white candy-stripe canvas sides, shelves and top of rippled glass, clear glass, or black marlite/ **retail:** $50; #6501 Buffet/ gray opaque-glass top, sides and back, black canvas/ **retail:** $175; #6340 Table/ 40" diameter travertine top/ **retail:** $140; #6250 Chairs/ perforated-metal seats, wrought-iron frames/ **retail:** $25/ designed by Paul McCobb for Arbuck, Inc./ **B. G. Mesberg National Sales, 201 E. 57 St., New York, N.Y.**



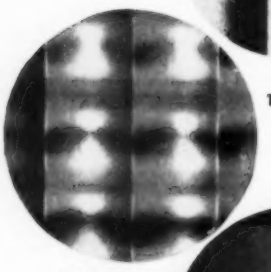
Architect: Russell Skiptow, Miami, Fla.

Which pattern would you use to brighten this room?

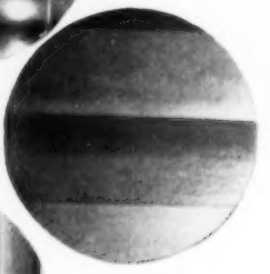
A few of the many beautiful Blue Ridge patterns ...shown approximately half size.

FLUTEX

FLUTEX TEXTURED FINISH



DOUBLEX



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MURALEX

LINEX TEXTURED FINISH

LINEX

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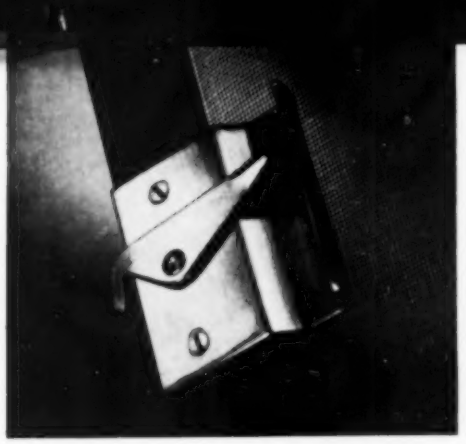

p/a interior design products

Sliding-Door Hardware: up-action latch of brass for sliding screen doors/ efficient with protection against tampering/ 3½" long, 2⅞" wide/ **Arcadia Metal Products, P.O. Box 657-V, Arcadia, Calif.**

Dining Table and Chairs: #5259 table/ soft edges of vinyl-plastic tubing, top of natural teak with stained inlay of teak in center, base of enameled steel/ **retail:** $208; **Chair** #5265/ laminated birch with walnut tips/ **retail:** $40; **Cabinet-chest** #5246/ rosewood or comb-grained oak, white-porcelain pulls, cast-aluminum legs/ 56" wide/ **retail:** $325/ all designed by George Nelson/ **Herman Miller Furniture Co., Zeeland, Mich.**

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Roddiscraft

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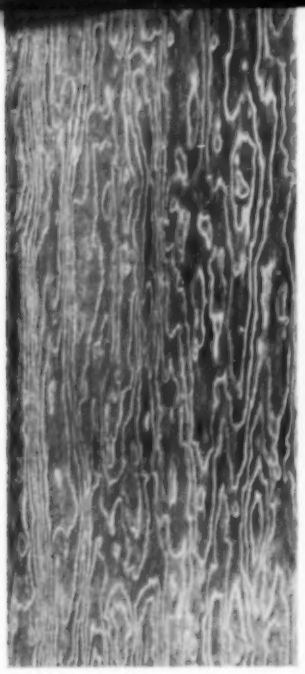
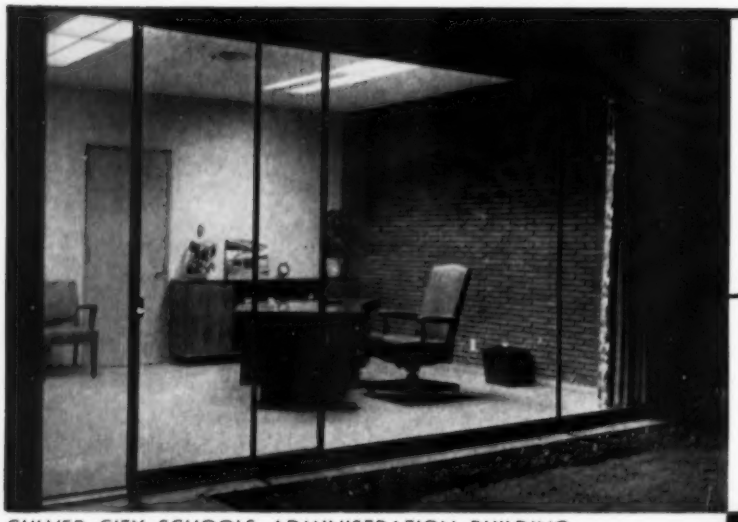


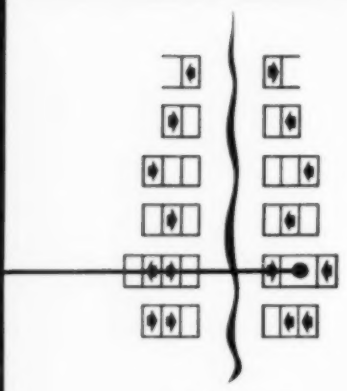
Textured Plywood: "Sea Swirl"/ Douglas fir with soft part removed by special process, to make graining prominent/ usable for Fox Wall Paneling or furniture/ **Associated Plywood Mills, Inc., Eugene, Ore.**

Fluorescent Ceiling Fixture: "Gar-See-Lite" series/ general-diffuse type, half direct and half indirect light distribution/ available in two- or four-lamp units and side panels of plastic, metal, or illuminated metal/ **Garden City Plating & Mfg. Co., 1750 N. Ashland Ave., Chicago, Ill.**

Gypsum Wallboard: available in plain, knotty pine, or Neutraltone Striated finishes/ 16" width, ⅜" thick, 8, 9, and 10 feet lengths/ panel Sheetrock/ **U.S. Gypsum Co., 300 W. Adams St., Chicago, Ill.**



CULVER CITY SCHOOLS ADMINISTRATION BUILDING
Daniel, Mann & Johnson, Architects



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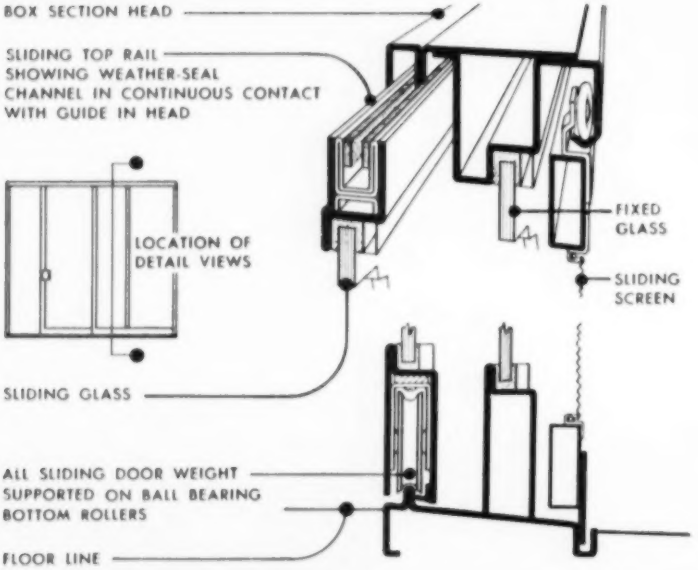
BOX SECTION HEAD
SLIDING TOP RAIL SHOWING WEATHER-SEAL CHANNEL IN CONTINUOUS CONTACT WITH GUIDE IN HEAD
LOCATION OF DETAIL VIEWS
FIXED GLASS
SLIDING SCREEN
SLIDING GLASS
ALL SLIDING DOOR WEIGHT SUPPORTED ON BALL BEARING BOTTOM ROLLERS
FLOOR LINE

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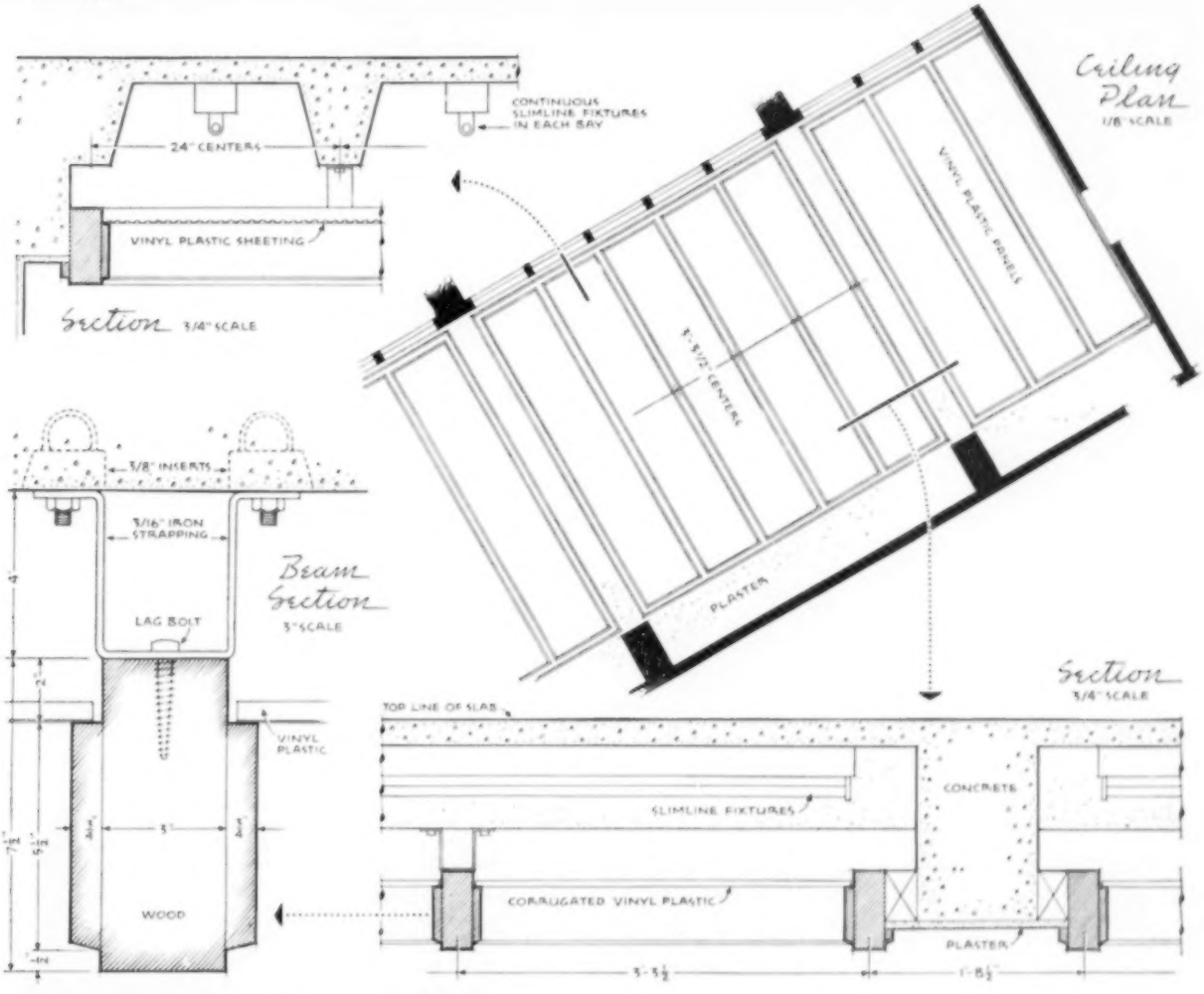

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Richard S. Colley, Architect

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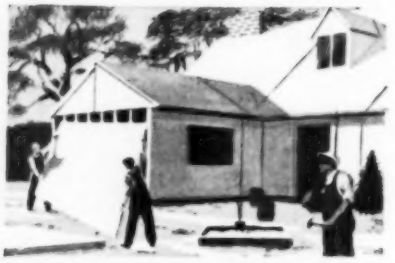

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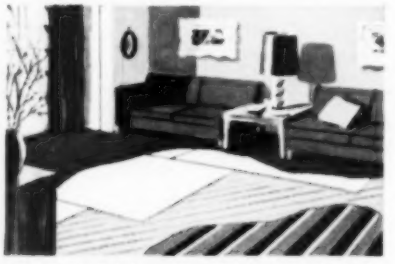

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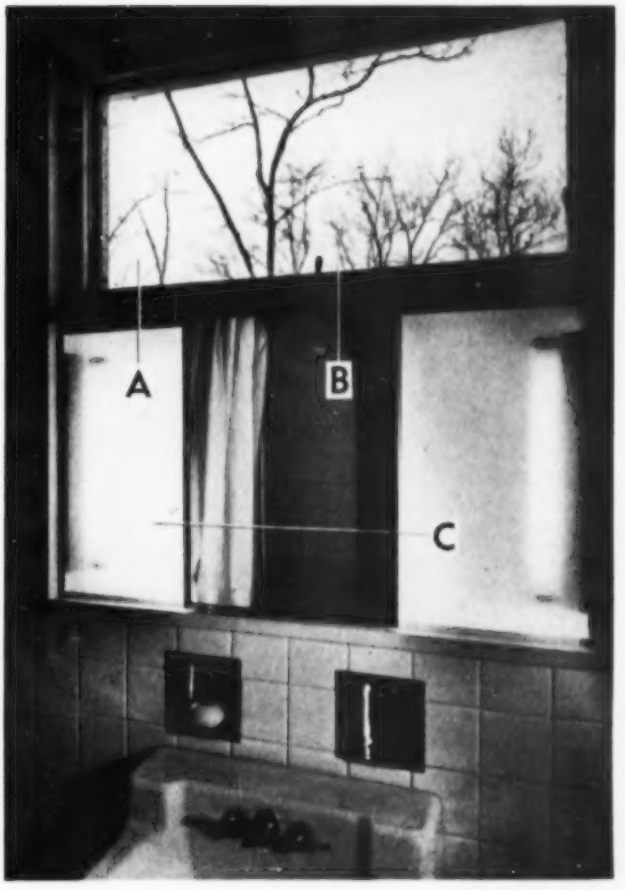
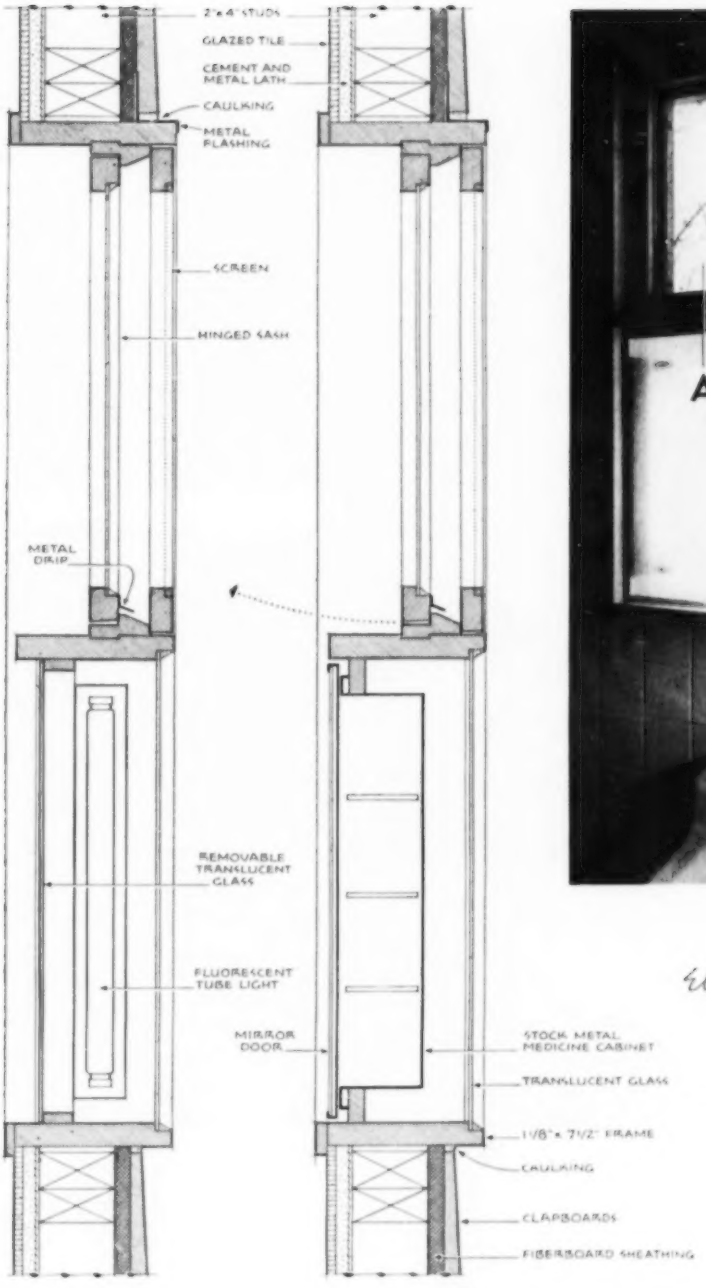
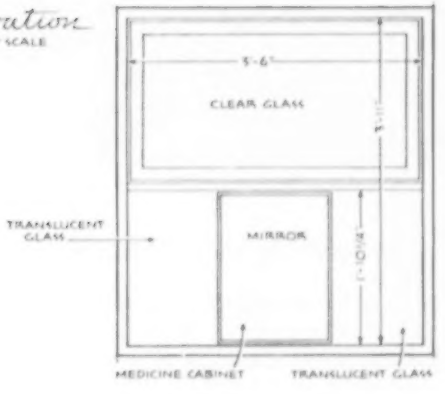


GOTTSCHO - SCHLEISNER

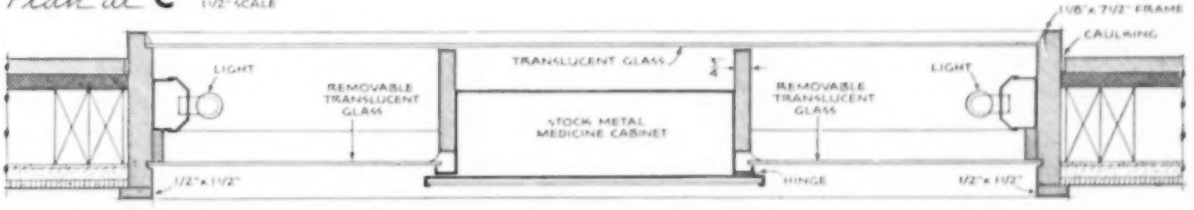


Section A 1 1/2" SCALE Section B

Elevation 1/2" SCALE



Plan at C 1 1/2" SCALE



WILLIAM ZENG RESIDENCE, Massapequa, N. Y.
Caleb Hornbostel and J. P. Trouchaud, Architects

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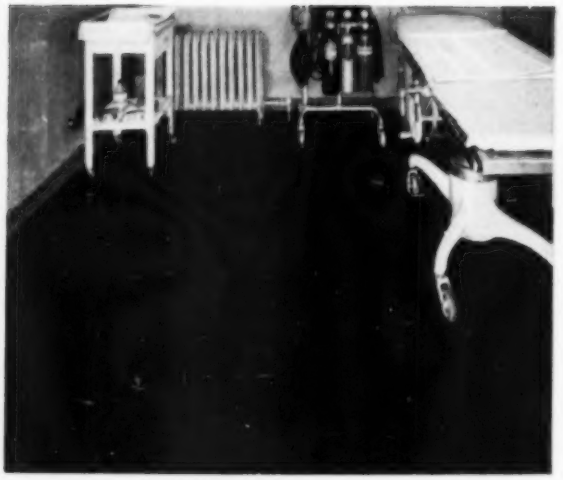
Service always



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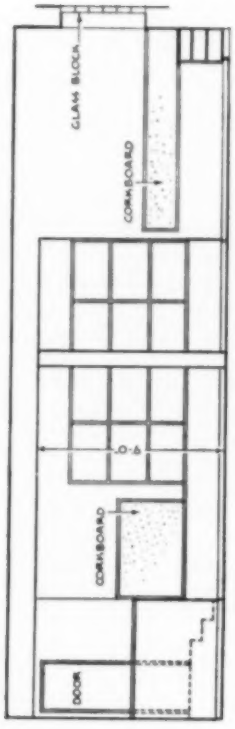
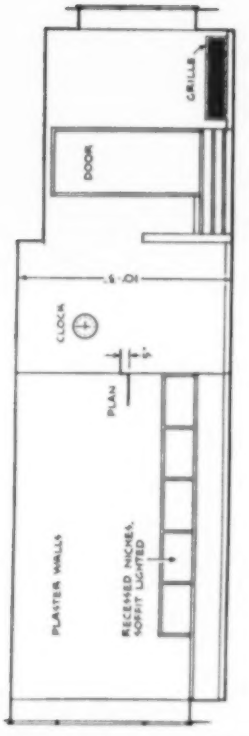
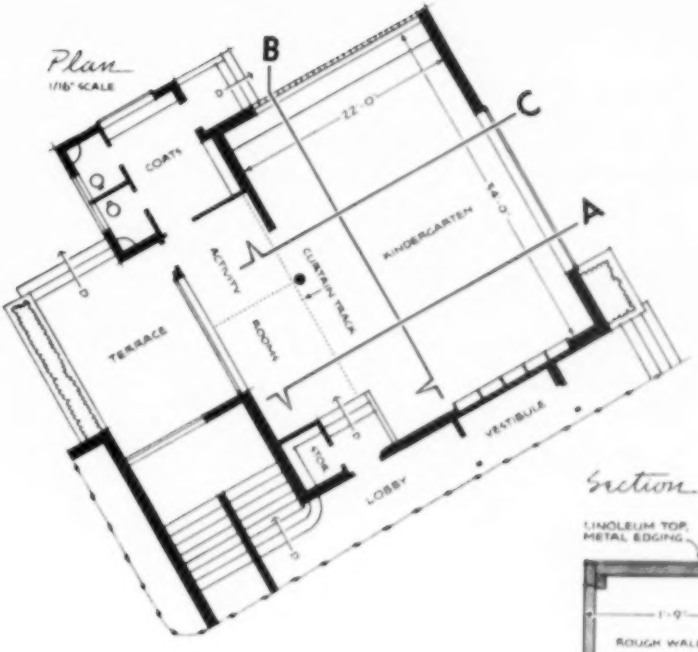
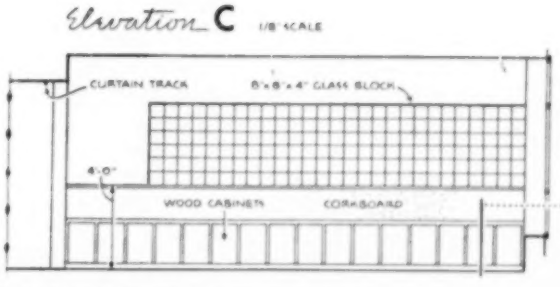


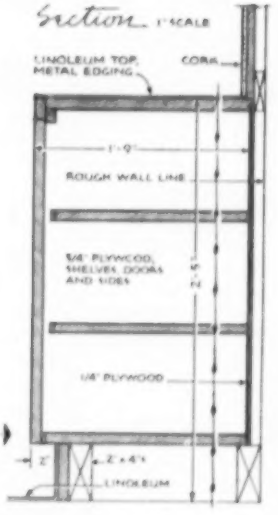
Section B 1/8" SCALE



Section A 1/8" SCALE







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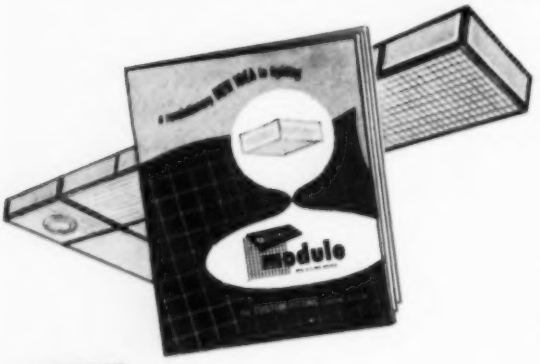

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"Passing a new law" is no substitute for lack of enforcement of an existing licensing law. Most statutes need amendments, but it can safely be said that no architectural registration law is enforced to the satisfaction of the profession. New York State, which has one of the stronger licensing statutes, is a case in point. I am informed that there are only eight investigators whose job it is to cover *all* of the state to enforce *all* of the licensing statutes (physicians, pharmacists, engineers, architects, etc.).

What should the architects do under the circumstances? This problem was posed during this past year, at which time I recommended that the New York State Association of Architects play an active part in enforcement. It was recommended that procedures be set up for dealing with those not licensed though practicing architecture, and for those licensed individuals who apparently were violating the canons of ethics. The suggestion was further made that the procedure applicable to the suspension or disbarment of an attorney, be used as a guide and that where necessary, enabling legislation be sought giving the state association the power to act.

Article 174, Section 7308 of the Education Law of the State of New York, entitled "Disciplinary Proceedings," sets forth the procedures to be followed for the revoking, suspending, or annulling of licenses of architects, as well as the grounds necessary for such action, as follows:

"The regents shall have power to revoke, suspend, or annul the license (which term, as used in this section, shall include a temporary permit issued under section seventy-three hundred four) and/or registration of an architect in accordance with the following provisions and procedure in any of the following cases:

a. Upon proof that the holder of such license is practicing in violation of section seventy-three hundred five of this article.

b. Upon proof that such license has been obtained or that the holder thereof has obtained such license by fraud or misrepresentation.

c. Upon proof that any money was paid to secure such license except fees prescribed by this article.

d. Upon proof that the holder of such license is falsely impersonating a practitioner or former practitioner or is practicing under an assumed, fictitious, or corporate name.

e. Upon proof that the holder of such license has been guilty of a felony.

f. Upon proof that the holder of such license aided and abetted in the practice of architecture any person not duly authorized to practice architecture under the provisions of this article.

g. Upon proof that the holder of such license is guilty of fraud or deceit of gross negligence, incompetency, or *misconduct* in the practice of architecture.

h. Upon proof that the holder of such license permitted his seal to be affixed to any plans, specifications, or drawings that were not prepared by him or under his personal supervision by his regularly employed subordinate."

The law set forth above is similar to Section 90 of the New York Judiciary Law, which relates to the suspension from practice or removal from office of any attorney or counselor at law. The said Section 90, entitled "Admission to and Removal From Practice by Appellate Division," subdivision (2), reads as follows:

"The Supreme Court shall have power and control over attorneys and counselors-at-law and all person practicing or assuming to practice law, and the appellate division of the supreme court in each department is authorized to censure, suspend from practice or remove from office any attorney and counselor-at-law admitted to practice who is guilty of *professional misconduct*, malpractice, fraud, deceit, crime or misdemeanor, or any conduct prejudicial to the administration of justice; and the appellate division of the supreme court is hereby authorized to revoke such admission for any misrepresentation or suppression of any information in connection with the application for admission to practice."

Some states have, under their respective licensing statutes, provided that the board authorized to examine and license architects may revoke, suspend, or annul such license for cause, such as to gross incompetency or recklessness, or for dishonest practices. The board, of course, must not exercise its power arbitrarily and must conform to the procedures and standards, as prescribed by the statute, and only where the discretionary power of the board is exercised with manifest injustice, will the courts interfere.

Unfortunately there is a paucity of decisions in this area, but those available indicate that the boards have strictly construed the statutes and have been reluctant to exercise their powers, except in a case involving flagrant abuses by the architect in the practice of his profession.

In Illinois, HURD'S STAT. 1911, Sec. 10, p. 87, providing for the licensing of architects and regulating the practice of architecture as a profession, contains the following:

"Any license so granted may be revoked by unanimous vote of the state board of examiners of architects for gross incompetency or recklessness in the construction of buildings, or for dishonest practices on the part of the holder thereof . . ."

The Appellate Court, in Illinois, in *Kaeseberg* v. *Richer*, 177 Ill. App. 527, declared that a single dishonest act on the part of an architect did not constitute "dishonest practices" under the words of the statute authorizing revocation of a license.

The generality of this Illinois statute was defended in *Klafter* v. *State Board of Examiners of Architects* (1913), 259 Ill. 15, 102 N.E. 193, at p. 195:

". . . The same reasoning applies to the words 'gross incompetency or recklessness in the construction of buildings.' These words clearly imply that the license shall not be revoked for trivial causes. What actions or conduct of an architect will bring him within the meaning of these words must be left to the sound discretion of the state board. It must be some act or conduct that in the common judgment would be considered grossly incompetent or reckless. It is a practical impossibility to set out in a statute, in detail, every act which would justify the revocation of a license. The requirements of the statute can only be stated in general terms and a reasonable discretion reposed in the officials charged with its enforcement. The statute in question is not void for uncertainty."

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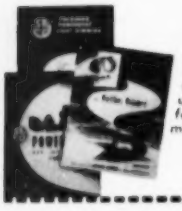

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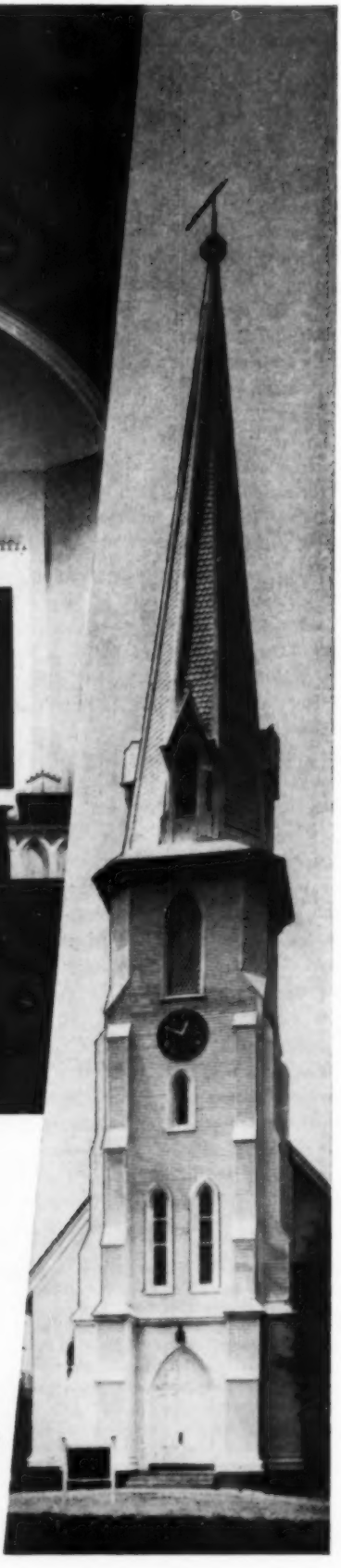

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by Carl Feiss

out of school

When I was up visiting the School of Architecture at the University of Theleme last week, I met Dean Turpin Bannister of the University of Illinois. He had been a visiting lecturer on architectural history, in which subject, at least for the moment, he happened to be steeped. We got into a serious argument on the pronunciation of "Theleme." Dr. Bannister insisted on the Rabelaisian French "Taylem," while I use the broad Scottish thistle of Urquhart's translation. Our debate might at any moment have descended to fisticuffs if the Professor of Architectural History had not intervened. "I wonder," he said, making peace by diversion, "If you gentlemen have recently read the inscription set upon the great Gate of Theleme—" and he began to intone that glorious and resonant verse which begins,

"Here enter not vile bigots, hypocrites,
Externally devoted apes, base snites, . . ."

and the Professor went on to the other verses, explaining that they actually constitute the entrance qualifications:

"Here enter not attorneys, barristers,
Nor bridle-champing law practitioners, . . ."
"Here enter you and welcome from our hearts,
All noble sparks, endow'd with gallant parts . . ."

and ending with:

"Here enter you all ladies of high birth,
Delicious, stately, charming, full of mirth, . . ."

"What a job it must be for the Dean of Admissions!" I mused.

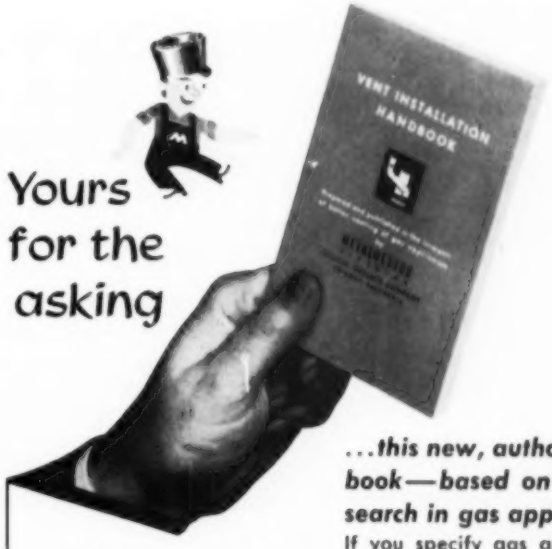
"I am always glad to see a co-educational program," said Turpin.

My visit to Theleme this time was to inspect the newly built research laboratory for testing materials and methods of construction. Like many architectural schools throughout the country, Theleme had been working for some time to get either a foundation grant or a generous donor to endow such a commodity. By rare good luck, just two years ago a fabulous, tax-exempt gift had come from the Skyhook Corporation just for this purpose. My good friend, the Dean of Architecture at Theleme, had asked me out to the School to inspect the new lab and proving grounds, to meet with the research staff and the Board of Governors, and as he coyly mentioned in his letter, "Perhaps you will see fit to say a few kind words about our program in your column in P/A." I am happy to oblige.

I was met at the airport by a handsome limousine, which had inscribed on it in gold Gothic letters, *"Skyhook Research Laboratories Unlimited, School of Architecture, University of Theleme."* There were two handsome young men in the car, well-dressed in Brooks Brothers type best-for-10A.M.-board meetings—pinstripe-blue-serge. Their teeth gleamed as white as the side walls of the tires.

"I'm Jimpson," said one, "Neo-electronics-multinuclear stress analyst. Meet Cantrib, in charge of our new program on circular diapason anchorage for Icaroid lift-slabs. The Dean is lecturing on

(Continued on page 188)



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out of school

(Continued from page 157)

"Christopher Wren at Williamsburg" this morning and suggested we take you over to the lab for a look-around before cocktails in the Board Room at noon."

I never drink before 4:42 P.M., but recognized that this might prove a welcome exception. The fact is, and I might as well admit it here, that despite appearances to the contrary, I am not a scientist in the accepted sense of the word. The reasons for this may be many. For instance, I flunked high school physics. Also I had great difficulty at the University of Pennsylvania with my college algebra, though I did get through *the* calculus and into stresses and strains and things like that. I was pretty good at designing simple trusses, and could make as good a vector analysis or martini as the next. But I never could understand why the prefix "the" before the word "calculus." It was mental blocks of this type which kept me from making the science of structures and materials a career, and besides, when I went to school they didn't fool around with such truck. They didn't have Skyhook Laboratories connected with architectural education in those days.

●

The new research laboratory is built some distance from the campus of Theleme, because it is of modern design. Its simple, horizontal-striped windows, cantilevers, brises-soleil, pilotis, and prestressed fieldstone-rubble curtain walls supported by exposed, flanged mullions painted dull black, mark this (flexible) building not only as a laboratory, but also as a contemporary. As we drew up into a well-filled parking lot nearby, I was struck forcibly by the symbolic skyhook which projects as an ornament from the slab of Parian marble three stories high flanking one side of the entrance. The bruise still hurts.

Like all modern university testing and experimental laboratories, the Skyhook Research Laboratories divide into several functional units. We sat in Cantrib's smart little office just behind his smart little secretary and listened while he, toy-

(Continued on page 161)

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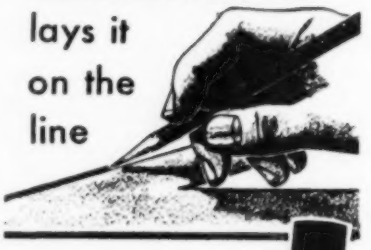

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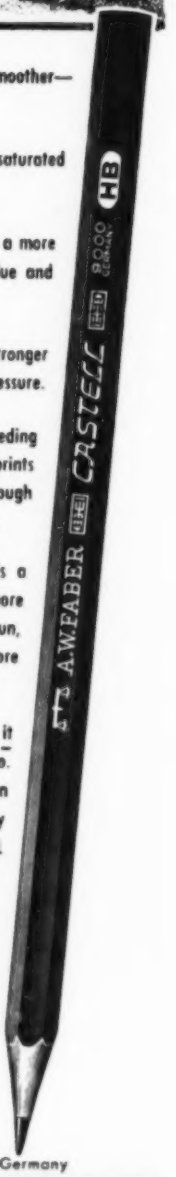

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out of school

(Continued from page 158)

ing with a paper weight of U235, gave a simplified breakdown of the organization.

"A modern research laboratory," he said, "Is a complicated organism. Actually, by comptometer, it takes 76 back-up men, 700 tons of machinery and equipment, 3000 gallons of chemicals, and generators producing 6,000,000 foot-candles, per day, per month, to keep one researcher going. I have omitted the janitor from my computations, for simplicity, but the factor of error is only .023%. Building research divides roughly into 17 components, each divisible on any standard IBM machine into as many parts as are convenient for packaging. It is actually the distributing system that has broken down, and we intend to go into the problems of helicopter trucking versus rail-freight rates at the next meeting of the Board."

Cantrib paused briefly, reached into the top drawer of his desk for a lead-armored glove and a pair of dark glasses, picked up a cigarette and pushed it into a small opening which he revealed behind a hinged cover set in the concrete wall. There was an intolerable spot of light for a moment, and by the time I could see again, he was placidly smoking.

"Atomic pile—right handy," he commented. "But, as I was saying, building research is fundamental to the teaching of architecture and we have here the perfect set-up. We are testing every building material known to man, and many unknown, and we are testing every construction system imaginable."

"But," I asked vaguely, "Hasn't some of this been done before—Bureau of Standards and other places? I should think it would be very expensive to do all this."

"Oh, it's nothing at all to Skyhook," said Jimpson. "Besides, they can write it off their income tax. That's a trade secret, of course."

"Don't get Jimpson wrong," said Cantrib. "Finance is one of our most important Units. We have 35 men working on contracts alone. We take on no job that doesn't pay. We're a nonprofit organization, of course (or we wouldn't be tax

(Continued on page 162)

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out of school

(Continued from page 161)

exempt), but this does not mean we are not vitally concerned with seeing that we are not too heavy a burden on the Foundation. After all, it has a terribly heavy overhead—travel, entertainment, and the necessary promotional jobs—so we feel that the lab itself should be on a kind of pay-as-you-test principle. We are doing a lot of charity work too. For instance, we have no sponsor for our studies on the use of buffalo chips as a roofing material. That is really our contribution to society. But let's look around."

I was conducted down a bright corridor into a room filled with large books and studious-looking middle-aged men. "Patent research," said Jimpson. "A most important spot. Anything we invent during our testing is checked here. If we find it hasn't been invented before, we send the idea or gadget into this next room," and we stepped into a dimly lighted and pleasant library in which sat a group of dreamy-eyed middle-aged women in flowered dresses—"where the invention is named. You'd be surprised what a difference there is in the saleability of a well-researched item if it's given a good name. We named a new toilet flush valve 'Suzy' the other day, and you should see the bids coming in!"

There is not space here to detail all the Units of the Skyhook Laboratory. I found the Ethics and Legal Unit most interesting. Here I listened briefly to a debate between a Professor of Philosophy and an attorney for the Lab before a special jury of businessmen. The question concerned pure science. The Professor was eloquently pleading that the invention of a new building system which would do away with all construction workers should be delayed long enough to provide for a taking up of the technological unemployment slack. He pointed out that the economy of the country, if not the world, would be seriously affected by this invention, and that actually if it proceeded on schedule, there would be nobody left in a position to buy houses built under the new system. The attorney for the Foundation, representing the interests of pure science, stated categorically that no one had the right to put a time limit on progress, that pure science was an end in itself, that (witness the atomic bomb) it was not the business of the pure scientist to concern himself with the social consequences of his own activities. The Professor of Philosophy retorted that if pure scientists sowed the seeds of self-destruction, there would be no world left in which to conduct pure scientific research. It was just at this moment that the Dean of Architecture entered the room and beaming, said, "Time for lunch!" To this day I do not know the outcome of the debate.

●

Lunch in the Board Room consisted of Gibsons, ham sandwiches, and coffee in cardboard cups. Corona-Coronas were passed as dessert. The discussion with several members of the Board who had turned up, rested largely on the merits

(Continued on page 164)

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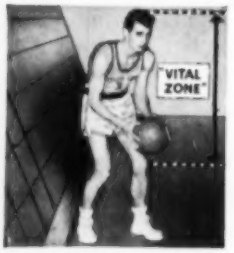

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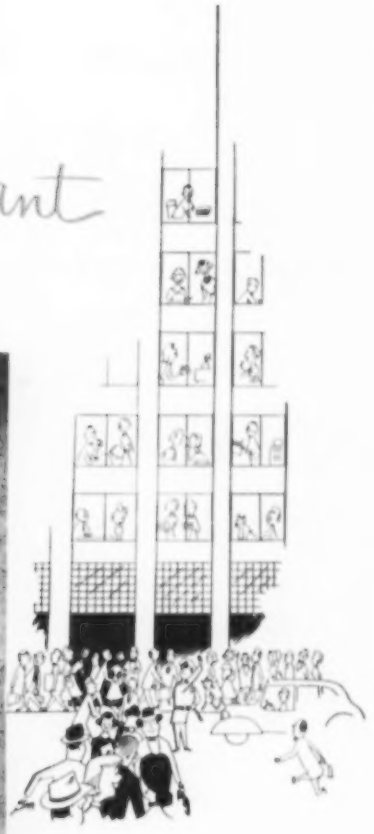

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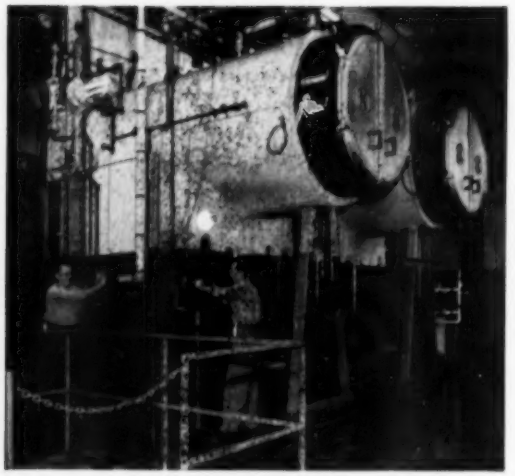

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KEWANEE, ILLINOIS

out of school

(Continued from page 162)

of shutters nailed to the clapboard walls of FHA-approved ranch style Colonial houses as insulating agents on the north walls of such houses. We were taken into a testing room three stories high to view a controlled experiment on the subject, being done for one of the major shutter producers of the country. A complete ranch style house with shutters on the north side was enclosed in a hermetically sealed glass case to which were attached thermostats, aquastats, barometers, wind gages, and Geiger counters. White-coated attendants in face masks and rubber gloves, pressed buttons and flipped switches as bells rang, and there were sounds of wind and rain from offstage. We watched, fascinated, from behind a glassed-in, soundproof partition, wearing earphones connected with the house itself, and you could actually feel the pulsation of the experiment as it entered high gear. It was a most impressive demonstration, particularly when one of the shutters (a green one on what was apparently a bathroom window) in the tense emotion of the moment, broke loose from its mooring and actually closed over its window. There was loud applause from the gallery until the Dean of Architecture informed us in embarrassment that this was an uncalculated event, and the experiment would have to begin all over again. Several weeks' work had been completely destroyed by the untoward incident. Scientific progress is made slowly and with many heartbreaks.

We moved on to another large room which contained a number of white-shirted men, each seated in a cane chair before a music stand, facing an elderly man, with a baton, on a podium. Instead of sheet music, the men were reading great columns of logarithmic tables. Their instruments, consisting of slide rules, made a soft, rhythmic music as under the guidance of the conductor they calculated. From time to time I made out phrases from Mozart, Sibelius, and Fats Waller. "It's the occasional coincidence of counterpoint with higher mathematics," said the Dean of Architecture.

(Continued on page 166)

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out of school

(Continued from page 164)

noting my astonishment. "We are having tape recordings made, and by judicious snipping have completely assembled Beethoven's 'Emperor Concerto for Slip Sticks.' Victor has bought the recording rights."

We went from laboratory to laboratory and from experiment station to experiment station. In one room is a complete lunadon (night version of heliodon) to study the tidal effects of the moon on the level of bath water. In another room, time studies were being made of mechanical bricklayers. Cantrib showed me with great detail the methods being studied in his own lab to keep lift-slabs from rising by their own momentum into the stratosphere, a problem which neither the Southwest Research Labs in San Antonio nor O'Neil Ford have been able to solve to date. He explained the reason for the open roof over the testing room as being necessary because occasionally a slab would get away and he didn't want men working on top of them to be crushed against the ceiling. I forgot to ask him what happened to such workers under the present circumstances.

I saw Buckminster Fuller and Fred Severud examining a huge intricate mesh of blown glass and cellotex. "We have devised here," said Jimpson, "A structural system that will support anything. Our main problem is to find a way of putting holes in it for rooms. There is a rumor that there are at present several men trapped inside. If they are there, we don't know how to get them out, as the inventor has been missing for three weeks. He's probably in there too. That's why the extra experts."

One of the most interesting experiments I witnessed was the "post stressing" of reinforced concrete. A five-story concrete building had been built by standard methods for the purpose, placed inside a huge hydraulic press, and stressed. The noise, heat, and dust were agonizing, but the result of stupendous pressures and volcanic heat was no less impressive—a fine, shiny 23 karat diamond. "We use them for industrial purposes, mostly," said the Dean.

●

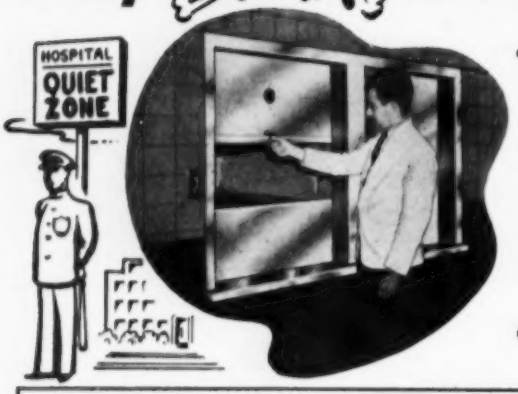
The Dean and I walked back from the laboratories in the cold winter twilight to his office on the campus of Theleme. I was trying to order the great mixture of impressions I had received during the day.

"It is a very impressive show," I said. "But where were the architectural students? How do you tie all this into education?"

"A good question," said the Dean, pausing to light his pipe. "We allow the students in quite frequently, to see what is going on. However, as you know, architectural students are very conservative and we have often found that new ideas and new methods upset them to the degree that their studies are seriously affected. We therefore give them contact

(Continued on page 168)

Why SLAM the Door...



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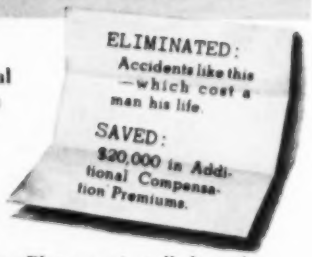

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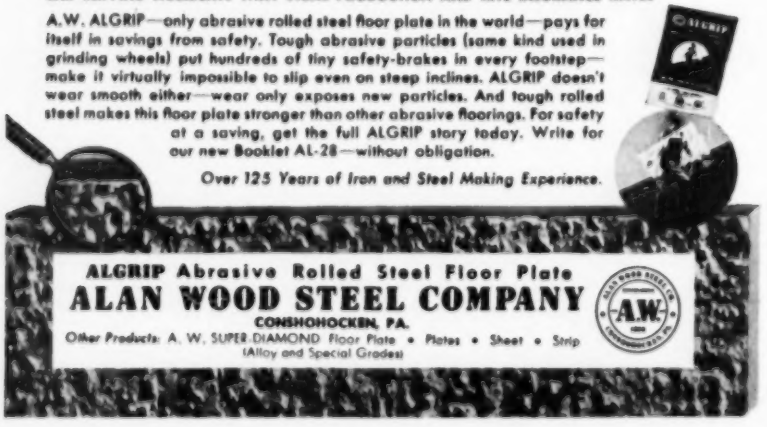

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out of school

(Continued from page 166)

with research and experiment most judiciously, allowing only the more mature to participate in a complete experiment."

While I may have appeared from time to time to be critical of the Dean, he is on the whole an honest man. He suffers, in my opinion, only from too wide a series of interests, but he and I have begun to agree on the comprehensiveness of architecture. Besides, it is always easy to forgive a man his virtues, if his sins are attractive enough.

"You may question the validity of the experiments we saw today," he went on to say. "I do not place educational value on them for themselves. Nor can I say that I am always too happy with the subterfuges used in this whole Foundation business. While certainly it is not a question of ethics, I still wonder at the propriety of a university entering into the fields of business and industrial enterprise. Yet I know that here we have opportunities which must not be missed and matters of propriety, when a moral issue is not involved, are really only restraints on breaks with tradition. There are new years ahead and new worlds to explore.

"Education is at a queer moment in its history. Research and experiment must be conducted by men of true scientific principle and true scientific impulse. To achieve the objectives of research means for each man years of training, years of experiment, and years of maturation. We have not yet learned how to tie this in with a standard curriculum or how to avoid wasting a student's time in the lengthy conditioning and infinite detail necessary in sound research. And what does he really need?

"There are, fortunately, men born with the singleness of purpose which both true research and pure science require. There are all too few with the ability to apply the results of pure research to the needs of society. And unfortunately, as you heard today, the timing of the results of pure research in pure science does not always coincide with the ability of society to absorb such results. This is a problem still too large for any one of us to solve. It means a search which the universities,

(Continued on page 170)

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THE PIONEER PRE-FABRICATED ACRYLIC SKYDOME . . . NOW RESEARCH-IMPROVED FOR GREATER STRENGTH, GREATER BEAUTY, GREATER PERMANENCE, GREATER ECONOMY

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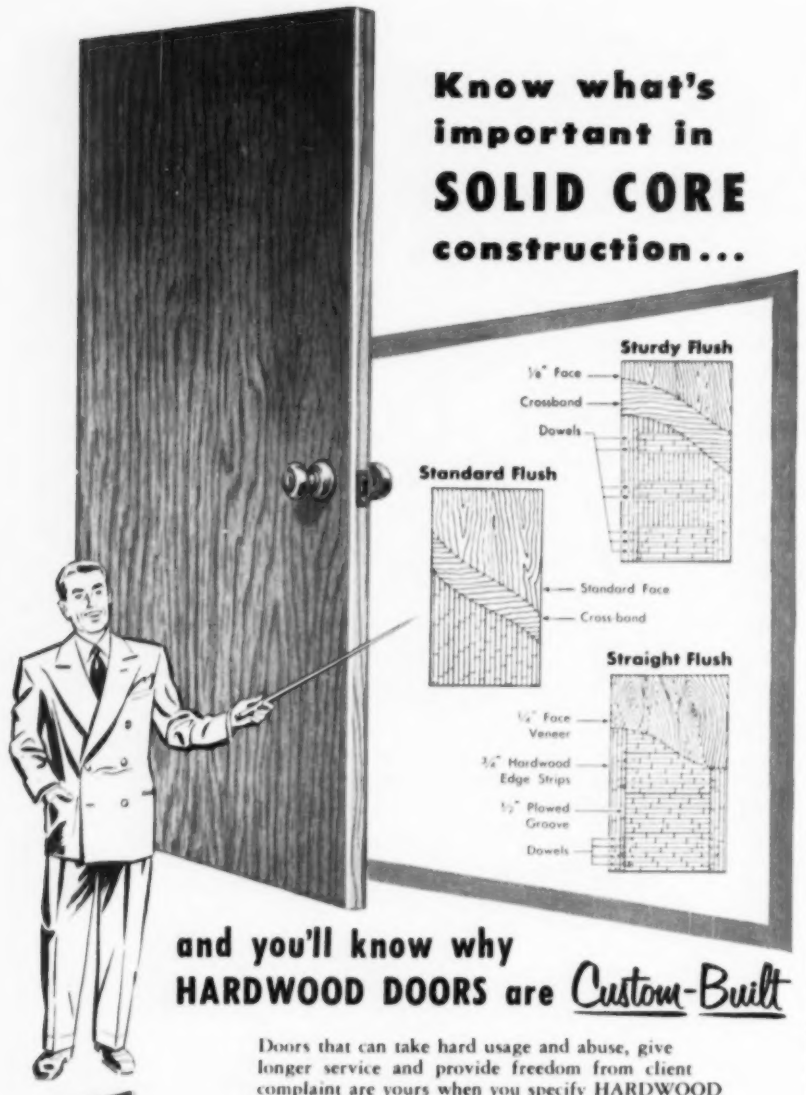

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out of school

(Continued from page 168)

or at least some of their staff, must continually make in their impersonal role as explorers in that mountain range which separates science and society in our impractical world."

The Dean tapped out his pipe on the Great Gate of Theleme as we entered the campus. He looked up at the inscription and quoted softly,

"Here enter you, pure, honest, faithful, true,
Expounders of the Scriptures old and new."

A new moon was rising through the bare branches of the elms. The Gothic towers and Georgian spires for once seemed as inconsequential as they really were. The Dean said, as though talking to himself, "No man has the right to limit his ambitions to what he can conceivably accomplish in his lifetime. In the first place, how can he know what his own limitations are? How can he separate out good or bad fortune from his own innate drives and his own abilities? But the questions are not as important as certain obligations. Man owes it to Society to will beyond the commonplace. He owes to Society the idealism which in time may make Christianity a living reality; he owes to Society the vivid ambition which builds the dome of a St. Peter's; he owes to himself the imagination which creates a rocket to the moon —whether it falls short or not. Besides it might get there on the second try.

"That teacher is not an educator who in his fear of either ridicule or his pride in practical pragmatics, stultifies the romanticism which is one of the true characteristics of youth, binds ambition to the limits of his own experience and competence, and puts blinders on the future. Such a man destroys the egg before it hatches, kills the seed before it germinates, and transmits to others that insidious virus of cynicism which is the most deadly of all attitudes. To be practical, it is true, is virtuous. But practicality untempered by idealism is a sterile virtue. So beware of the man who puts a time limit on idealism and who in his dread of being called 'Utopian' calls a halt to the building of a better world."

We had reached the doors to the School of Architecture and Planning just as the lights went on.

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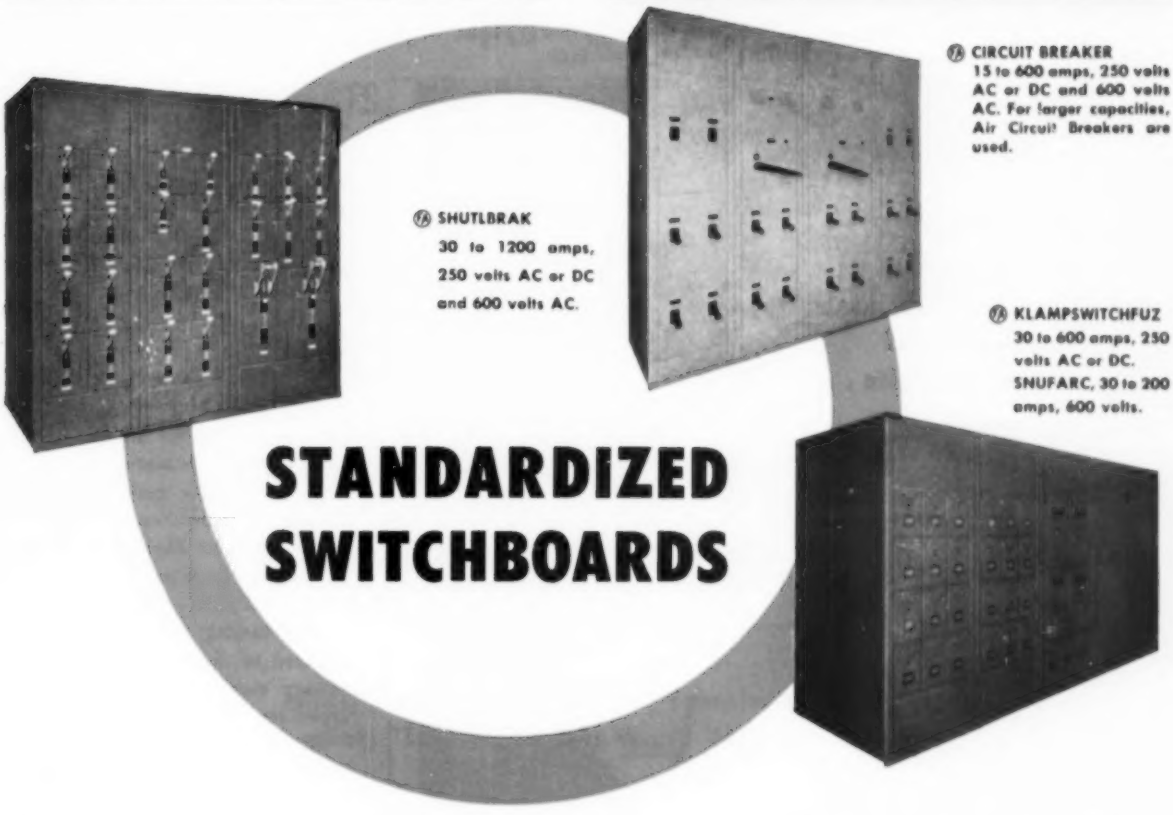

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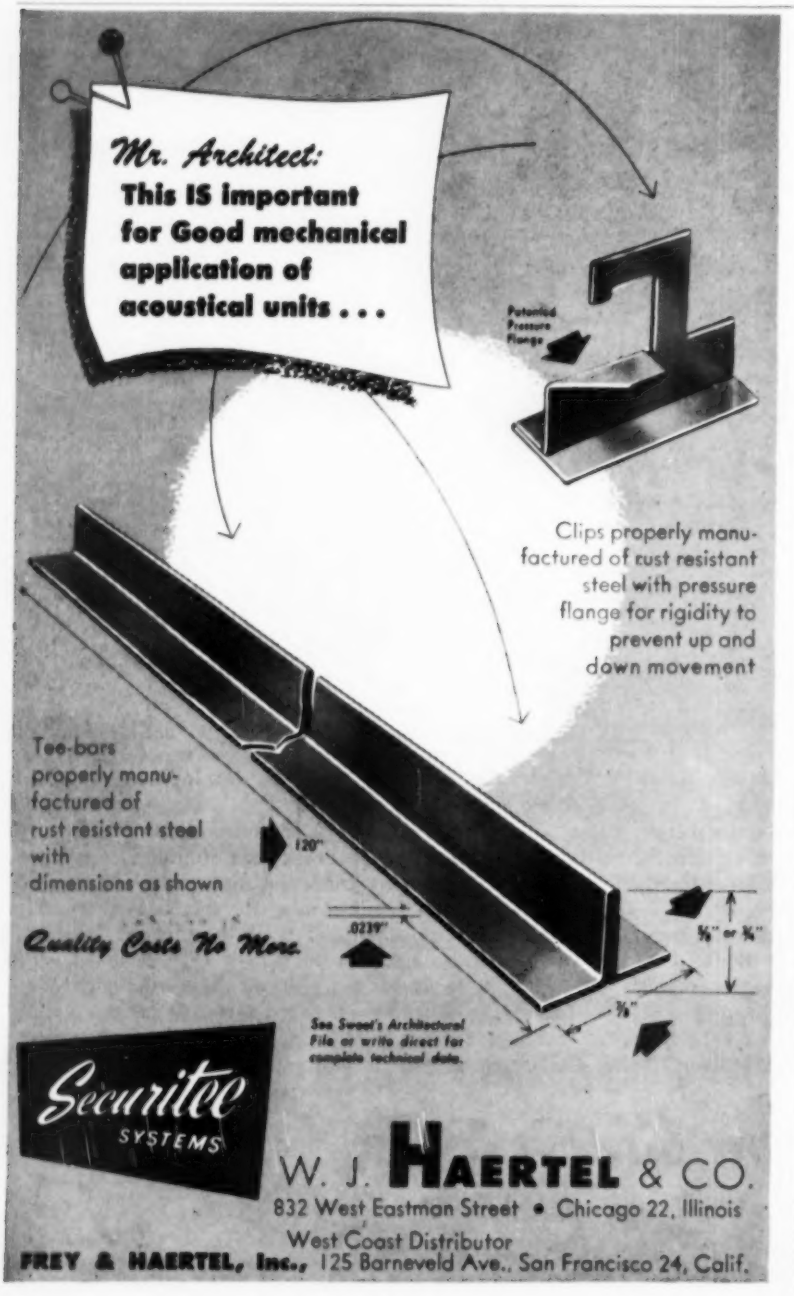
How to Build Modern Furniture. Vol. II, Designs and Assembly. Mario Dal Fabbro. F. W. Dodge Corp., 119 W. 40 St., New York 18, N. Y., 1952. 160 pp., illus., $6

This Hospital Business of Ours. Raymond P. Sloan. G. P. Putnam's Sons, 210 Madison Ave., New York 16, N. Y., 1952. 331 pp., $4.50

Australia's Home. Robin Boyd. Cambridge University Press, 32 E. 57 St., New York 22, N. Y., 1952. 287 pp., illus., $4.50

The Story of Gloucester Cathedral. G. H. Cook. Phoenix House Ltd., 38 William IV St., Charing Cross, London WC2, England. Distributed by The British Book Centre, Inc., 122 E. 55 St., New York 22, N. Y., 1952. 48 pp., illus., $1.50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postwar sobriety

Built in U.S.A.: Postwar Architecture. *Philip Johnson, Henry-Russell Hitchcock, Arthur Drexler. Museum of Modern Art, 11 W. 53 St., New York 19, N. Y., 1953. 128 pp., 190 illus., $4.50.*

"Not so long ago, certain thinkers liked to see the problems of building as something each generation might solve *de novo* for itself, tearing down all that was inherited and erecting everything anew to last a few decades before it was replaced," states Henry-Russell Hitchcock in his introduction to the significant new publication of the Museum of Modern Art that is a long-awaited sequel to *Built in U.S.A.: 1932-1944.* "But the world's cities have remained full of structures fifty and a hundred years old. We are forced now to consider, as so few modern architects did in the 20's, how buildings will wear through a generation or more, and whether they are likely to grow obsolete visually even more rapidly than they must do physically . . . cheerful innocence is rapidly passing; and that fact has redounded to the advantage of our mid-century architecture. We are, I think, grown somewhat more sober now."

This book sums up architectural work in the United States since the end of World War II and its publication was coincident with the opening, January 21, of the major winter exhibition at the Museum, under the same title. It contains a preface by Philip Johnson, Director of the Museum's Department of Architecture and Design; an introductory essay on contemporary architecture, by Henry-Russell Hitchcock, critic and historian who chose the work illustrated; and analyses of the 43 buildings, about half of them houses, by Arthur Drexler, Curator of the Department. Thus the general architectural climate of today is described, supplemented by a study of design practices favored by the architects represented.

"By the middle of the 20th Century, American architecture has come to occupy

(Continued on page 174)

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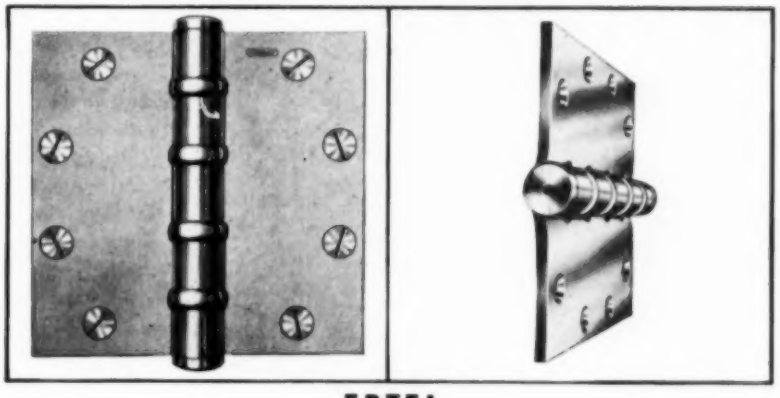

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and the man who specified, sold and installed it is seriously embarrassed. Now, *only eighteen months after installation*, it's a rusty hulk. A dangerous, unsanitary eyesore that no longer is fit for the purpose intended.

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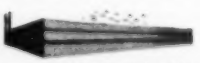

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reviews

(Continued from page 172)

a position of special prominence in the world," Hitchcock perceives. "Toward this prominence two things have particularly contributed: on the one hand, the very considerable production of a controled economic boom, and on the other, the continuing activity of various architects belonging to several successive generations whose abilities are fully worthy of their present opportunities. The fact that among these architects are several whose original reputation was made in Europe proves that American architecture is not an isolated phenomenon: in architecture, as in many other things, we are the heirs of Western Civilization."

He finds architects "less hide-bound than they once were" and that "even in doctrinaire camps there is less tendency to see heresy on all sides or to claim that architectural salvation lies only in particular sociological or technological approaches." The buildings included were chosen by Hitchcock to represent both "quality" and "significance of the moment," an undertaking made more difficult in view of the limited size of the book in contrast to the "great quantity of good building in these postwar years."

C. M.

planning the square

The Heart of the City: Towards the Humanisation of Urban Life. *Edited by J. Tyrwhitt, J. L. Sert, E. N. Rogers. Pellegrini and Cudahy, 41 E. 50 St., New York, N. Y., 1952. 185 pp., 105 fig., charts*

This volume, with its extraordinary and witty layout, is as pleasing for the eye as it is basic for present and future activities in city planning. It developed out of discussions on the function of the square, as they took place at the Eighth Congress of C.I.A.M. (International Congresses for Modern Architecture). The mere fact that the square has become a dominating topic among city planners is decisive, because it means a turn toward humanization. Too long, ar-

reviews

chitects and city planners have gnawed into functionalism, its ethical demands, its structural expressions, and its practical applications. This fight for functionalism, begun almost 50 years ago (and in Chicago even earlier), is over; but it is always hard for the revolutionaries of yesterday to concede that there is nothing left to combat. While the architects and designers of the first two decades of this century glorified the engineer beyond the call of duty, in order to kill 19th Century eclecticism, the city planners of today perhaps extol the sociologist too indiscriminately.

For two reasons, *The Heart of the City* stands out among the numerous publications on city planning of the postwar era: first, it contains an extraordinary percentage of really important projects, far above the average in their originality and immediacy of approach; second, because the various contributors in their theoretical statements definitely stress the human point of view, in contrast to the hypertrophic emphasis on technical considerations during the two prewar decades. Even if the long shadow of Le Corbusier and his often naive schematism of human activities and human relations hovers over them all, there is enough variety of individual approaches, toward the task of each single architect, to avoid the impression of uniform opinion or of the mere fashion of a clique. The publication is divided into three parts: "Aspects of the Core," a discussion of the general problem and of some specific ideas; "Examples of the Core," showing a greater number of actual projects; and "Outline of the Core," developing a principal program. The first part may be of widest general interest. The contributions of J. L. Sert (Centers of Community Life), Walter Gropius (The Human Scale), and Ernesto Rogers (The Heart: A Human Problem) deal really with the essence of civic design, while other contributors discuss more particular aspects.

It is impossible within the limited space of this review even to touch upon all ideas presented—some of them en-

(Continued on page 176)

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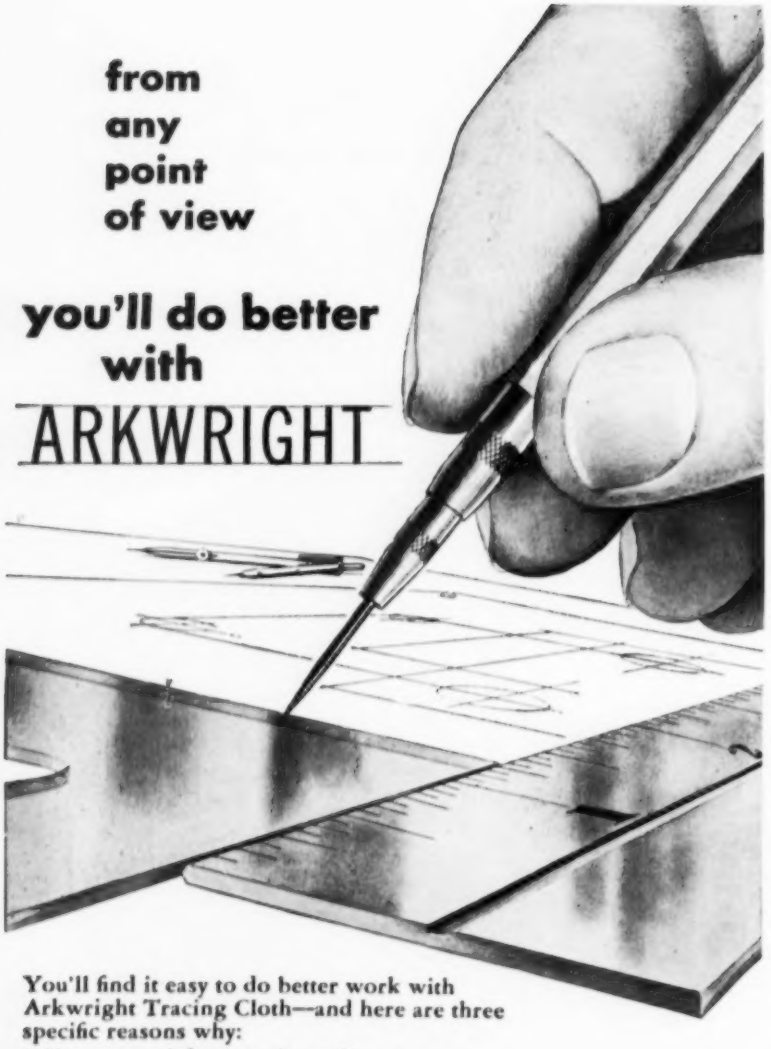

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reviews

(Continued from page 175)

tirely new, some of them already known, but not any antiquated. Gropius mentions, for example, in the "Discussion on Italian Piazzas" how his students rejected for our time the idea of arcades framing a square and considered it old-fashioned. But after a visit to St. Mark's Square in Venice one of his students wrote to him that he changed his opinion. This discussion on the Italian Piazza, in which many members participated, produced highly stimulating ideas about the esthetics and history of the square. G. Paulsson (Upsala) stresses a very decisive point in his scepticism about the possibility of "building for eternity." Paul L. Wiener whose projects in co-operation with Sert for various South American cities seem to the reviewer among the most original, tries to create a sociological and historio-philosophical basis for the new trends affecting the core, that to him should be the physical expression of the "collective better self." Giedion's brief historical remarks may stimulate modern architects and city planners to study the past for the good of the future, while Le Corbusier repeats some of his well-known ideas and theories in rather aphoristic form. Jaqueline Tyrwhitt develops, in a very clear fashion, the individual categories of the square, on all possible scale levels.

The second part of the book gives some excellent examples of these various categories. Quite naturally, certain specific ideas can be found in almost all projects, even under very different conditions. A certain uniformity appears in the attempt to achieve a monumental impression and spatial tension by the contrast of one very tall and one extremely flat building—a scheme which seems to have developed almost into a formula. On the other hand, one must also expect that in the common work of so many contributors the individual author—sometimes without even being conscious of it—contradicts the ideas of a colleague. Thus, for instance, some contributors emphasize vehemently that the past can teach us nothing, since the problems of

(Continued on page 178)

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reviews

(Continued from page 176)

the various ages are too different: others stress the value of past achievements for today's solutions. Some look at the square as a frame for ever-spontaneous expression of the life of the community; some others follow Le Corbusier in his extremely schematic categorization of all human and community relationships.

However, such divergences of opinion and varieties of artistic expression are only wholesome symptoms of activating fertility of planning today and for the way that its guiding principles are approached in this publication. Even if one does not subscribe to all opinions pronounced, one must accept this publication gratefully as a basic interpretation of the principal tendencies of modern city planning. PAUL ZUCKER

compendium on planning

Town and Country Planning. *A. J. Brown and H. M. Sherrard. Melbourne University Press, Carleton N3, Victoria, Australia. Available: Cambridge University Press, 32 E. 57 St., New York 22, N. Y. 1952. 382 pp., illus., $12*

This is an Australian product, which may explain the uncertainty of its purpose. It is expository, hortatory, and technical; and I was never sure whether it was addressed to the ignorant but inquiring layman, the bumbling administrator, or the technician in search of facts, figures, ways, and means. It is thus a compendium and very well-done—thorough and comprehensive—perhaps the kind of book that should be read by students of subjects requiring a general knowledge of what planning is about and what the process is. The authors are obviously men of culture and planners of weight and merit. But I found the book far too dull and detailed for a layman, and too all-including and superficial for the technician, who can go to more detailed and specialized books for his technical needs. There is no bibliography and the index is inadequate. HENRY S. CHURCHILL

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became a means of conveying spiritual truths; or, in other words, spiritual meaning determined outer form. It was this symbolic function of art in architecture that characterized Hellenic statues and reliefs, and that determined the ground plan and the design of the temple.

With the victory of Rome over Greece this concept degenerated into the *Allegoric*, but the *Symbolic* again came into full flower in the Middle Ages. For a brief period, during the youth of Christianity, there occurs a regression into a Magic concept. St. Augustine, for instance, was in full accord with Paleolithic man when he believed that "art has the power to tie invisible spirits into visible objects." But with the age of the Cathedral Builders, the symbolic character of medieval art and architecture was fully established. Building and design became a visualization of the divine spirit. The Cathedral itself was the supreme symbol, its high nave and soaring spires pointing toward eternity. But where the Romanesque builders of the early Middle Ages had considered the church itself as sufficiently symbolic, the worldly-wise scholastic planners of the Gothic period knew that they needed a more sense-appealing symbolism than mere structure. They gave each statue its symbolic function—from the grinning devils spouting rainwater from the roof of Notre Dame, to the smiling angels of Reims. Every form is "harbinger of the holy."

Those among the Integrators, who critically point a finger at the examples of the Cathedral Age, should come forth with an equivalent symbolism for our time. We have become very inhibited in accepting spiritual values. We can hardly define them for ourselves, let alone conceive a visible form that would have universal meaning. In the musical show, "Finnian's Rainbow," the Sears Roebuck & Company catalogue symbolizes "the great come-and-get-it day"; and the decayed carcass of a book might be a suitable symbolic attribute to a television station; but these are hardly spiritual symbols.

●

The next development in the integration of art and architecture was the *Allegoric*, which actually is a simplification and materialization of the symbol. An allegory is a presentation of one thing in the guise of another—Justice, for instance, as a lady with an eye bandage and a scale, or Death as a skeleton with an hour glass. The successful allegory rests on a common agreement of interpretation. Ages of great cultural cohesion and unified standards of learning, such as the Re-

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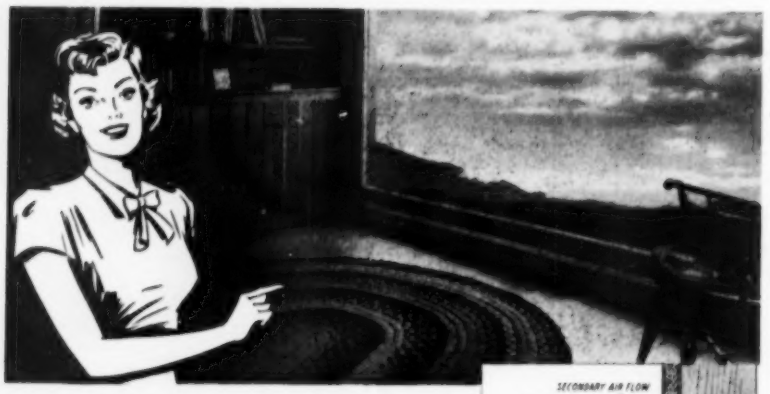

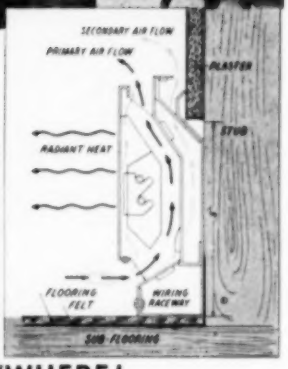

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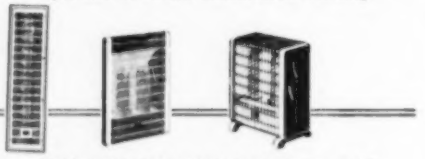

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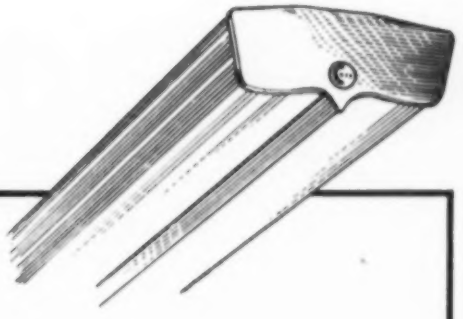

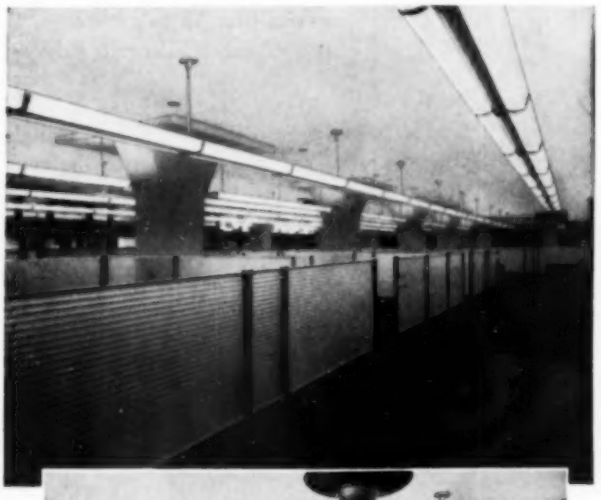

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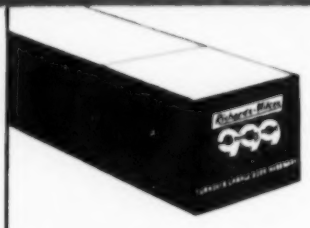

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the issue of integration

(Continued from page 180)

naissance and the Baroque, produced successful allegories. A fresco of four lightly clad maidens with varying victuals in their hands, or of a stooped giant carrying a globe, makes sense only when it can be assumed that the majority of the beholders recognize these figures as the Four Seasons and Atlas. Wherever Allegoric art occurs as an attribute to architecture, it is designed to project and emphasize the character of the building. Michelangelo's figures "Night" and "Day" are suitably placed on a commemorative tomb, because they allegorize phases of human life; Titian's sensuous "Education of Cupid" decorated the worldly Palazzo Borghese; Pozzo's mammoth allegory of "St. Ignatius carried to Paradise" rises in waves of light and color to the lantern of the cupola of Sant' Ignazio in Rome; and in my student days the auditorium of the University of Leipzig contained a monstrous allegory by Klinger — "Christ and the Seven Christian Virtues invading Mount Olympus"—that brightened many a dull convocation by its involuntary humor.

Would the Integrators not have to admit that an indication of architectural meaning through Allegoric art presents quite a problem in an age where super markets, bus terminals, and office buildings furnish the largest walls and the fattest budgets? Since allegorism has as its first condition a common agreement on interpretation, we have to admit that our civilization lacks the basic premise. A universal idea such as "faith," for instance, looks totally different to Congregationalists, Lutherans, and Catholics; or "progress" would find customers whether it were an Allegoric presentation of the atom bomb, a toothbrush, or the United Nations Charter.

The common denominator of Magic Symbolic, and Allegoric art was its figurative character, based on an exclusive use of man and beast as carriers of meaning. The current devaluation of

(Continued on page 188)

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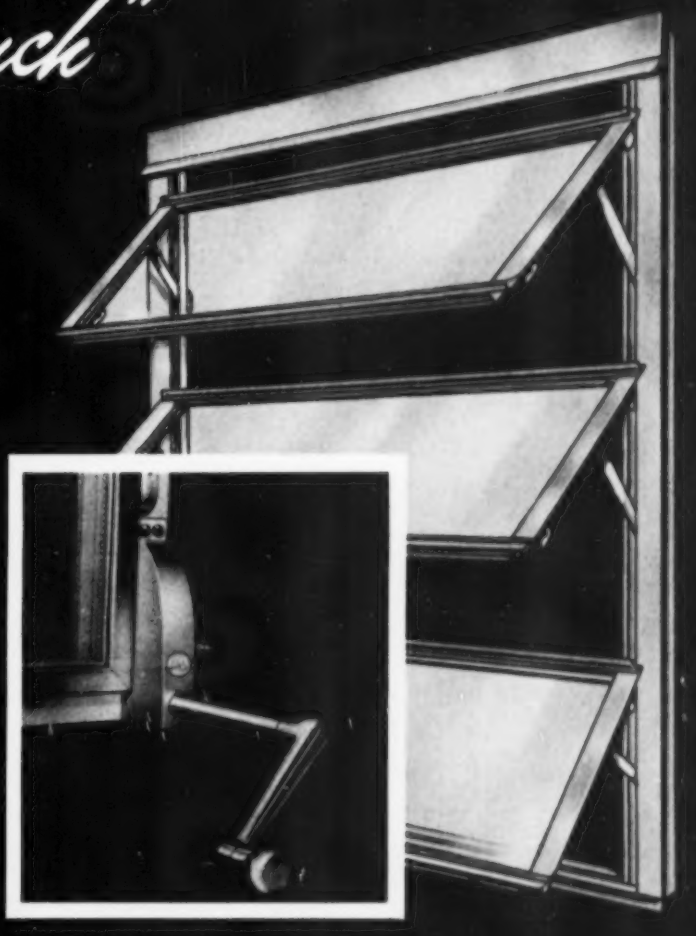

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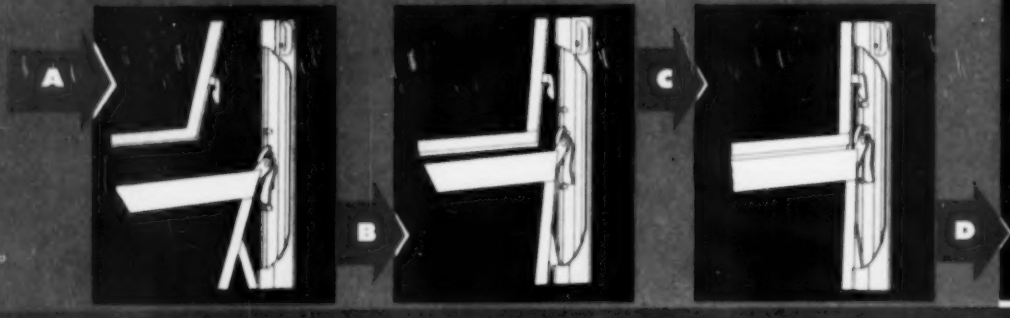

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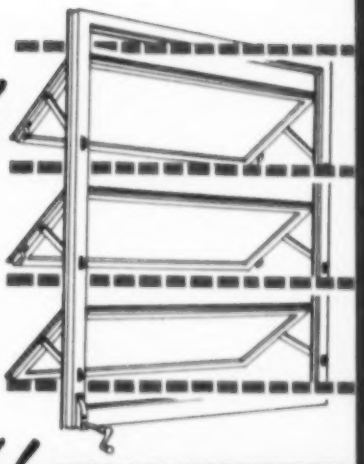

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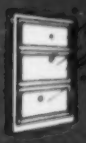

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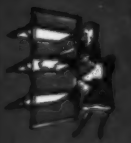

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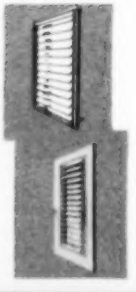

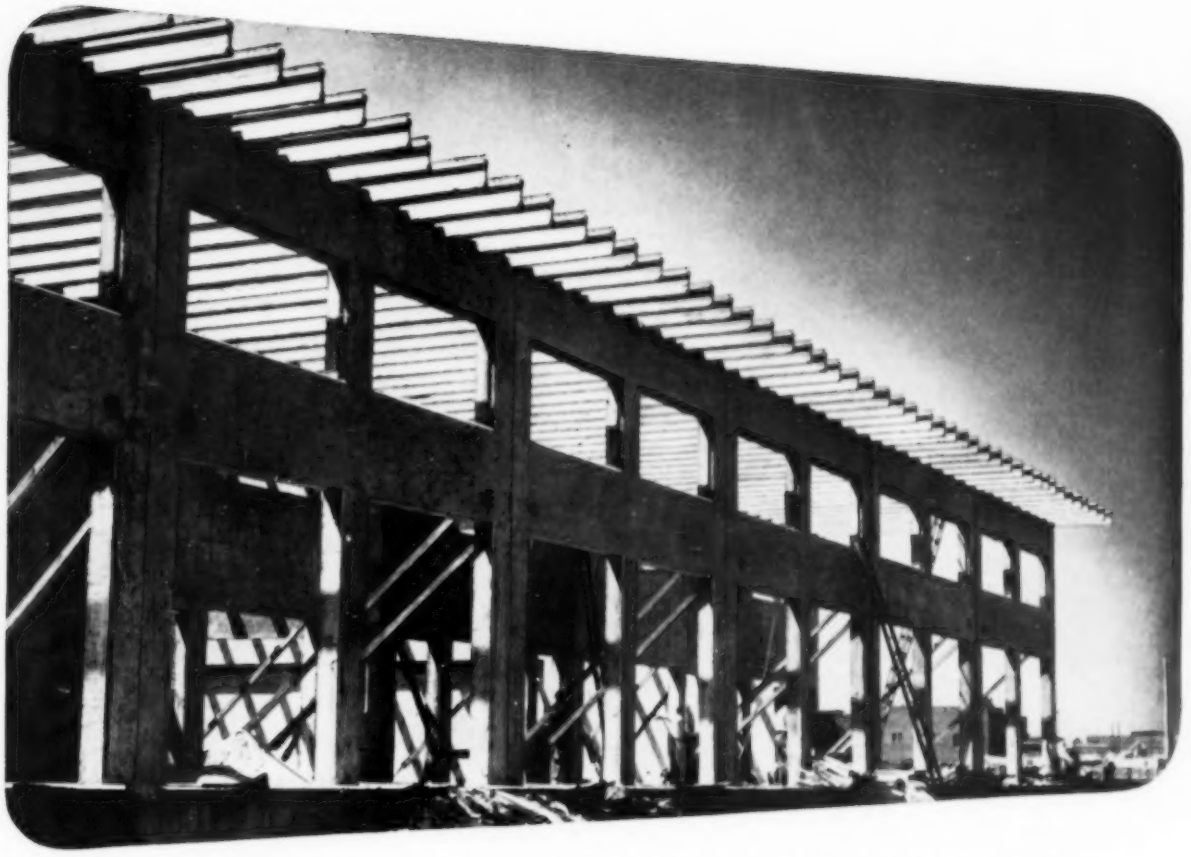

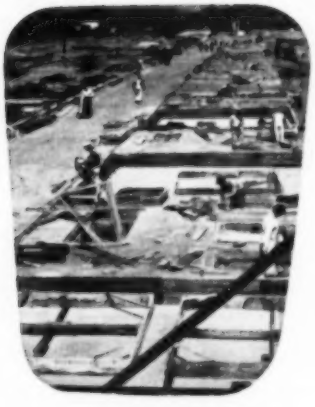

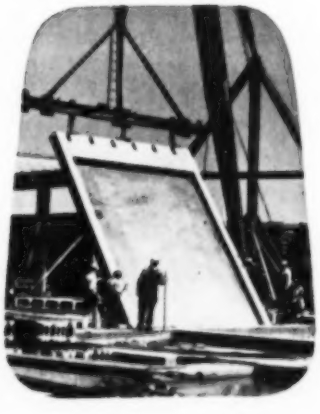

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Photos are construction scenes at St. Louis Produce Market. The concrete floor of the two 114 x 1235 ft. one-story buildings was a giant casting platform (center). Precast concrete wall panels were tilted into place (bottom). More than 23 miles of precast concrete joists went into the roof (top). L. Roy Bowen & Associates, of St. Louis, were the architects and engineers. Robinson Construction Company, of St. Louis, was the contractor.

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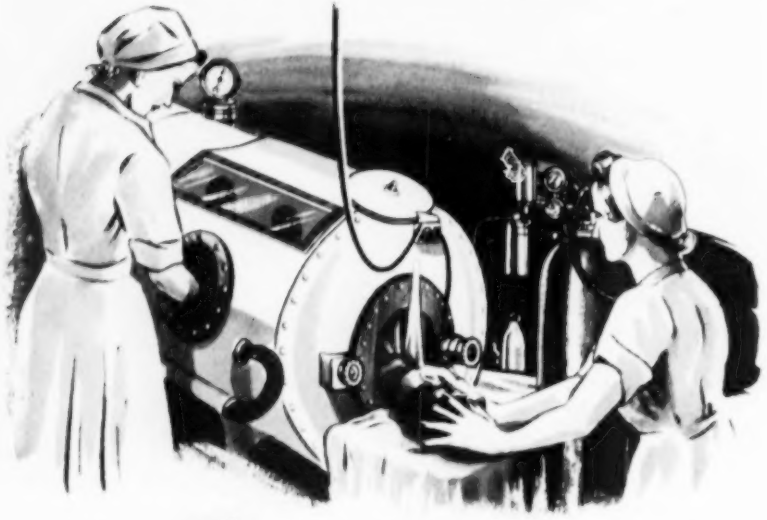

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(Continued from page 182)

the human figure adds one more negative argument to those rendered above.

•

There remains the third phase of architectural meaning in history: the Formalistic; and it must be assumed that it is this approach the academic Integrationalists have in mind. Magic as well as Symbolic art had been purely devotional, as we saw. The calculated effect on the eye ranked second in importance to the spiritual contents. The interpreters of Plato, on the other hand, proclaimed pure form harmony as the only purpose of art, and the artist as the autonomous creator of physical beauty —without ties to either cult or revelation.

The art piece became its own purpose, and its only value was its formal perfection. The statue stepped, so to speak, away from the wall, which was now hidden or ignored. This separation of architectural structure and esthetic form goes back to Alberti, the theoretician of the Renaissance, who considered the functional aspect of a building as anti-art and demanded, "form as a spiritual cloak, thrown over the bareness of matter."

The result of this fractured concept of art in architecture was, as we all know, the age of revival styles that produced Greek bank buildings, Egyptian jails, and bathtubs fashioned after Roman sarcophagi. During the Formalistic phase, art and architecture drifted apart like unfaithful lovers. Where no connection exists between the building and its decorative attributes, it is folly to speak of integration. All that can be achieved is formal competition.

•

"Art for art's sake" was finally challenged by the Chicago School and the emerging creed of *Functional-Technology* in building— which constitutes the beginning of a fourth historical stage of architectural meaning. It is at this point in the discussion—

(Continued on page 190)

HOW TO ANTICIPATE PLANT EXPANSION

Q-PANELS

Air view of the FORMICA COMPANY'S building. Walls of Q-Panel were detached, moved forward and used again on the addition. A Q-Panel wall has the quality of a permanent wall but with the additional advantage of being removable to provide for plant expansion.

Close-up of the FORMICA plant shows the neat and attractive design formed by continuous Q-Panel fluted texture. Architects have achieved a great variety of design by combining Q-Panels with other materials for decorative effect.

From left to right—Mr. D. J. O'Conor, President of the FORMICA COMPANY, Mr. A. M. Kinney, President of A. M. Kinney, Inc., which designed the FORMICA plant and Mr. George H. Clark, Vice President in charge of engineering of the FORMICA COMPANY.

The FORMICA COMPANY built its new Cincinnati plant with Q-Panel walls, later removed the Q-Panels from two sides and re-used them on the addition. Note, in the air view, the older section has a lighter colored roof than the newer section.

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Q-Panels lend themselves to a great variety of designs. They are available in several fluted patterns. They require no maintenance, arrive at the site ready for erection either as a factory-assembled panel or a field-assembled panel. Do you have the details in your file?

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the issue of integration

(Continued from page 188)

with their backs firmly integrated to the wall—that the most progressive among painters and sculptors point to the abstract quality of their work—devoid of Magic, Symbolic, or Formalistic connotations. Modern architecture, they argue, owes its very existence to the Cubism of Picasso, the Suprematism of the Russians, the Neo-Plasticism of Mondrian, and therefore is one with their later mutations. Yet it is exceedingly doubtful which came first: the egg or the hen. Frank Lloyd Wright conceived the intersecting planes and cubes of the Robie House in the same year (1909) in which Picasso painted the "Factory at Horta." The unjustly forgotten Adolf Loos built houses of constructivist angularity while Mondrian was still in grammar school. The light-glass transparency of Gropius' Fagus Factory precedes by five years the "Realist Manifesto" of the Constructivist sculptors, Gabo and Pevsner. All that can be said with certainty is that painting, sculpture, and architecture received identical stimuli from the social climate of their time, and reacted to them in a form language that shows certain contemporary relationships.

But where architecture increasingly emphasized technological realism, painting and sculpture moved rapidly toward spiritual abstraction. It is this very fact of abstraction in art that furnishes the strongest counter-argument against so-called art-architecture integration. When the arts left the last vestiges of objective form behind, and turned to a purely subjective expressionism, they proclaimed the individual judgment of each man the only yardstick of artistic merit. The evaluation of all art was declared purely relative. Where an easel painting or a piece of sculpture has to have no more permanence than is dictated by the taste and financial investment of the owner, a mural or a statue in a public building must have a lifetime of

(Continued on page 192)

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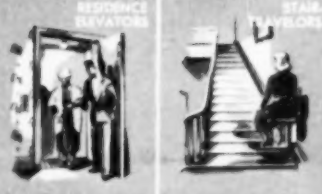

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Weldwood X-ray door in the X-ray Division of Greenwich Hospital. More than 500 Weldwood "Stay-Strate" doors are used throughout this 180-bed hospital. Architects: Skidmore, Owings and Merrill.

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Rails: Top and bottom rails are thoroughly kiln-dried hardwood, total width 4-3/8", built up of stock securely glued together.

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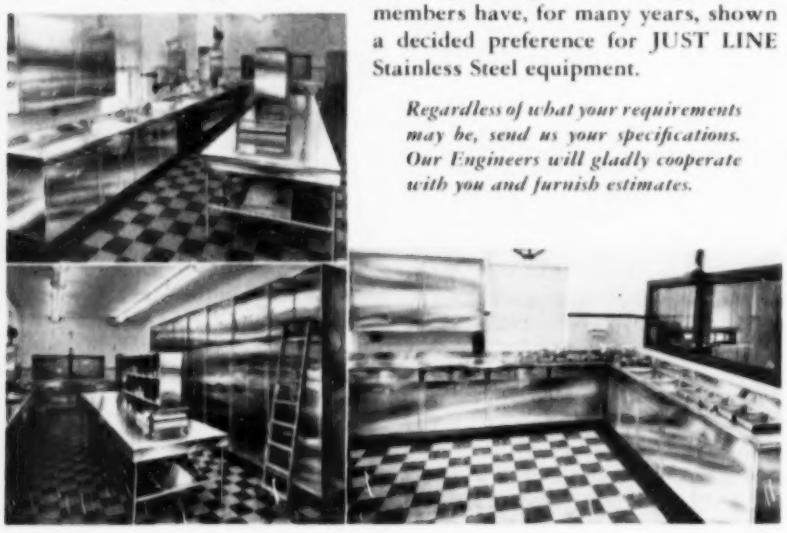

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the issue of integration

(Continued from page 190)

decades. These are looked at by thousands of people, day in, day out. But one man's Manship is another man's Noguchi, and I, for one, would get as tired of continuous exposure to, say, the symbolic realism of Shahn as to the subconscious girations of Motherwell's brush. *The anarchic independence of the contemporary artist has come home to roost.*

•

Is the conclusion a denial of emotional content in architecture? The answer would have to be an emphatic *no*! We no longer have to be afraid of the Victorian confusion of sentiment with sentimentality. The gaunt plainness of Jenney's first Leiter Building demands admiration, not as an example but as a monument of past courage. Our radius of visual perception has been greatly widened by new concepts of space, light, motion, and the dimension of time. It is so rich and varied that it can no longer be expressed in a single "integrated" form language. While painting and sculpture will have to come to terms with the involved formal and psychological problems raised during this century, architecture by its public nature has to confine itself to basic visual fundamentals that are accessible to all seeing and feeling men—meaning color, light, form, and texture. They are produced by the same technological means that determine the structure of the building they have to serve. And it is exactly this which good modern architecture has been doing. The contrast between the light-absorbing glass walls of the Lever Building and the light-reflecting steel columns; the textured surface of the marble at the UN Building; the primary color panels used by Marcel Breuer; a curved concrete ramp at a department store by Pereira and Luckman; the rich golden wood grain of William Wurster's Bay Region houses, have an emotional esthetic effect. They

(Continued on page 194)

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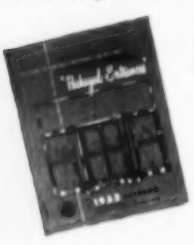

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the issue of integration

(Continued from page 192)

integrate function and form without a challenge to individual opinions.

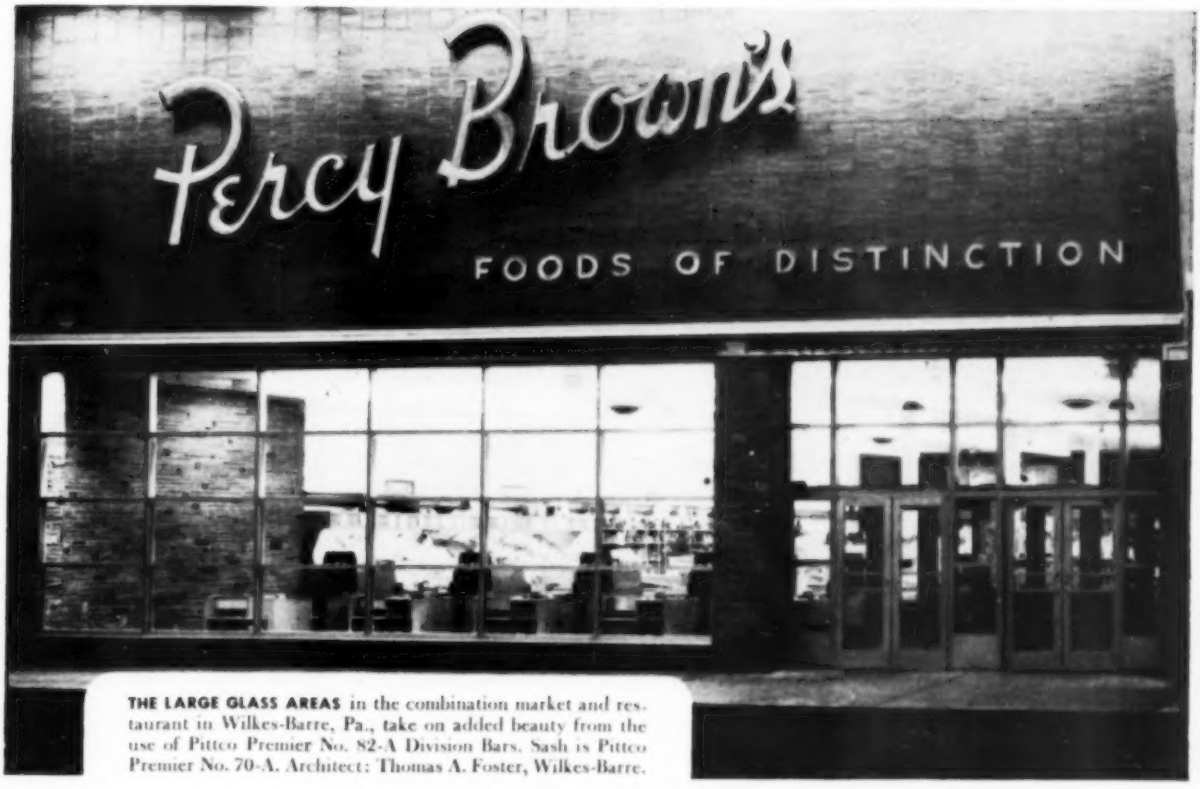
There are a few sculptors who have understood that the clock of history cannot be turned back, that static "sculpture in the round" is incompatible with the transparent, nonaxial quality of modern buildings, unless it responds to the challenge of motion—Calder's mobiles, for instance, and particularly the beautiful steel forms of José de Rivera. They are sensitive and exhilarating creations that look well in conjunction with modern architecture, because they were created from a kindred spirit. Their esthetic contribution is excellent, but the best they can hope for is to go well *with* the building, they will never be *of* it. No mural or sculpture of today can, as Magic and Symbolic art could, make insignificant architecture meaningful and appealing, or influence the lives of building occupants.

These are demands that can only be fulfilled by the architect himself. It was he who picked up the basic visual fundamentals that were left lying around, after the historical schools of art had closed down, and who combined the tints and textures, and shadows and reflections with structure in a new and totally original phase of *architectural integration*.

notices

consulting architects

Credit to MOORE & HUTCHINS, Architects, New York, as Consulting Architects for the Cherry Lane elementary school, Carle Place, Long Island, was unfortunately omitted when P/A discussed the relation of that building to its landscaping, in SEPTEMBER 1952 P/A (pp. 92-93). LAFARGE, KNOX & MURPHY were the Architects for the school; BRYAN J. LYNCH was the Site Planner and Landscape Architect; and Sculptor Jose de Rivera was Consultant on the site treatment.



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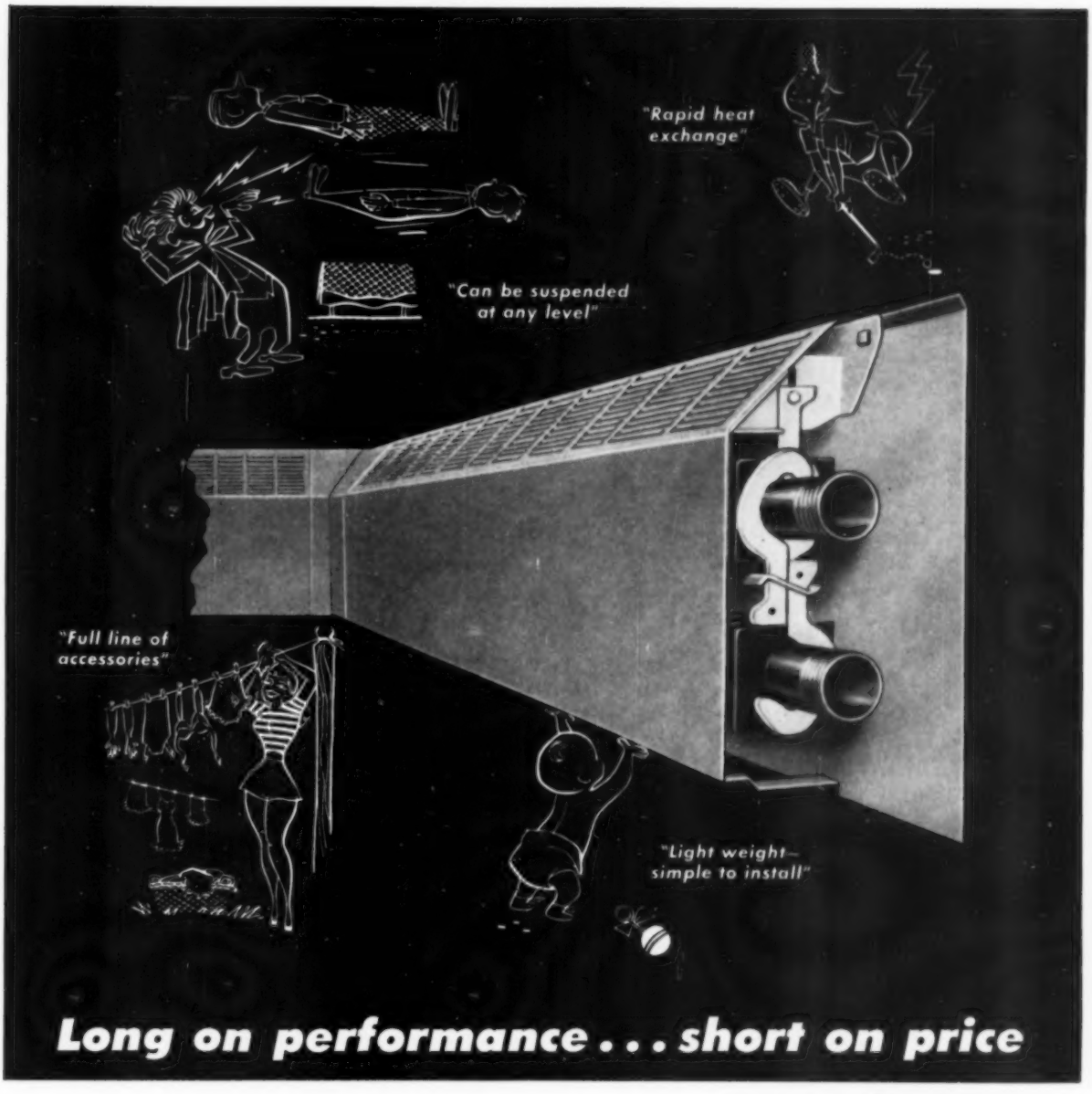

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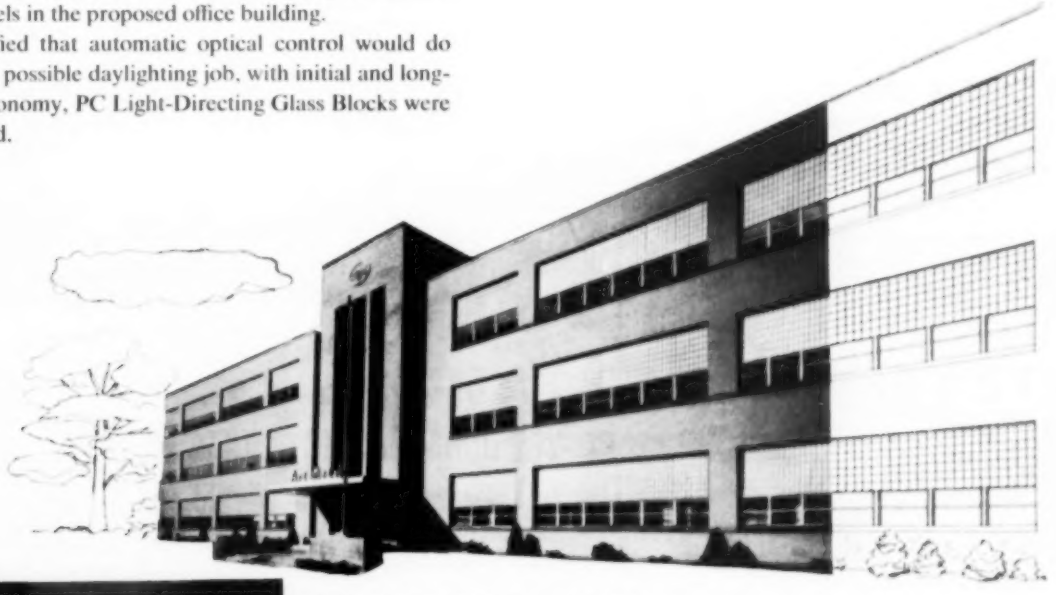

Architects: Freeburg and Lindquist, Jamestown, N. Y.
General Contractor: Warren Construction Company, Jamestown, N. Y.

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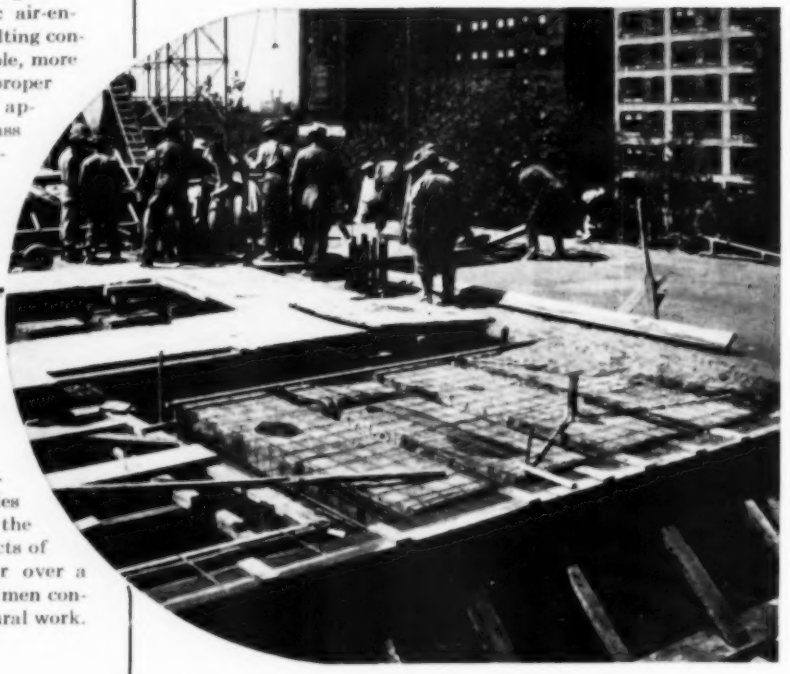

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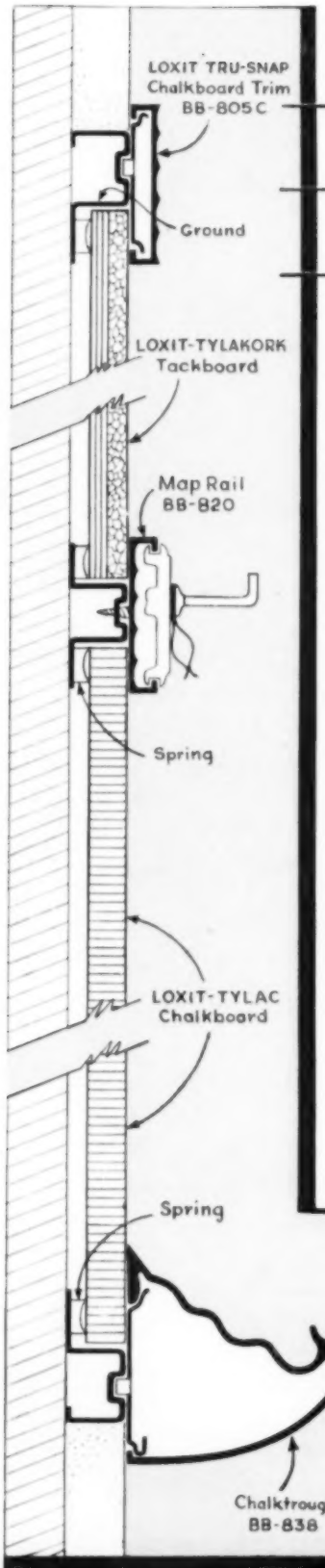

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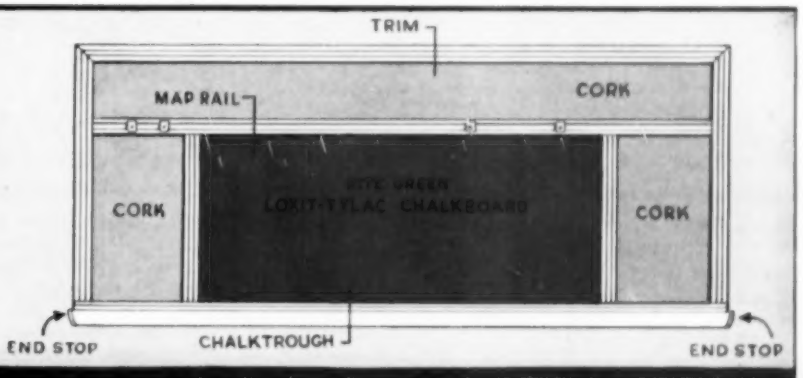

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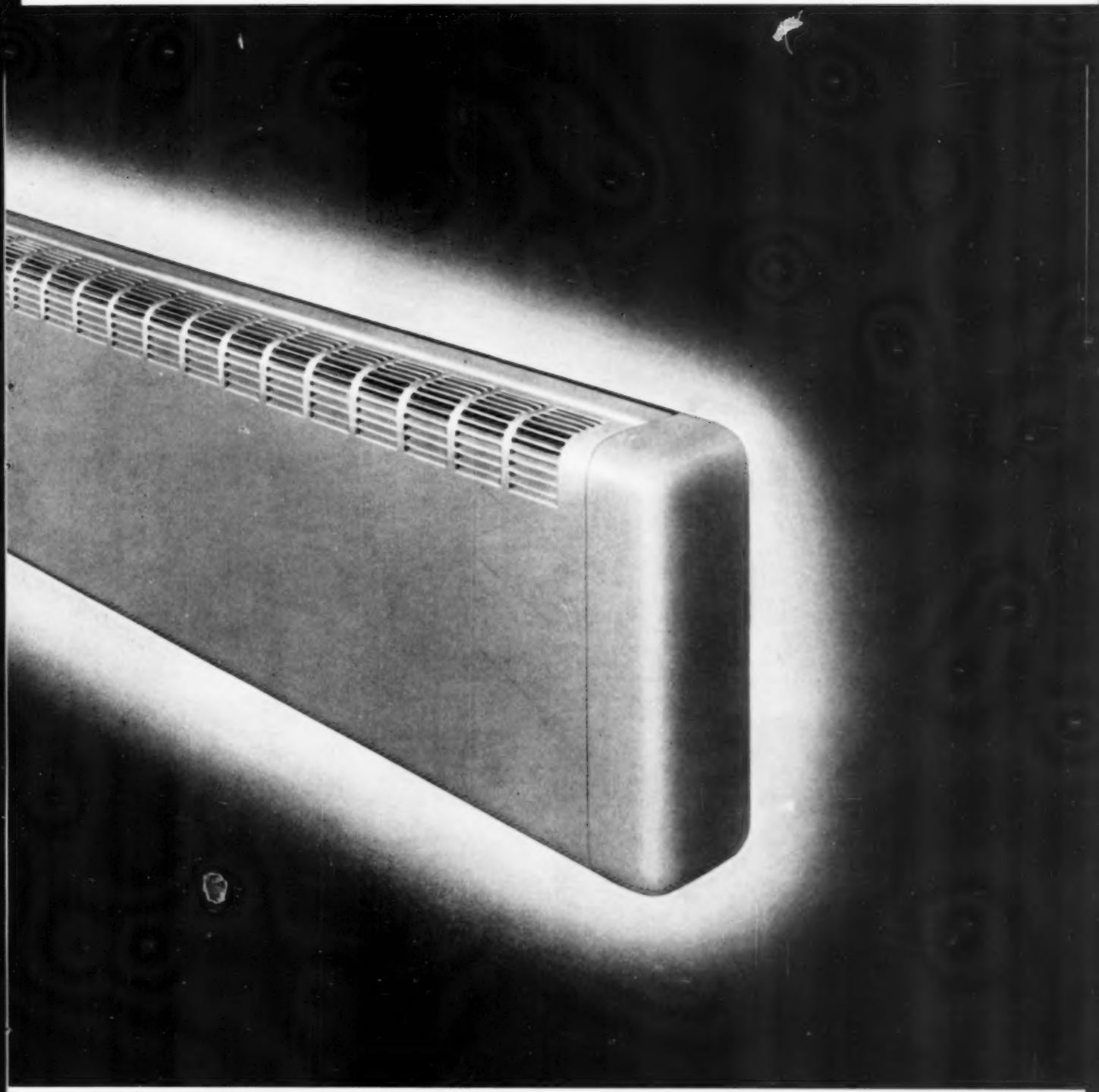

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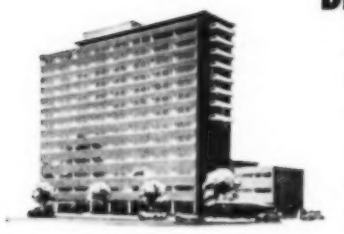

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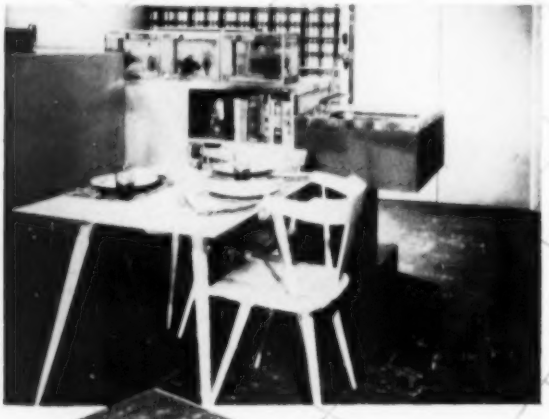

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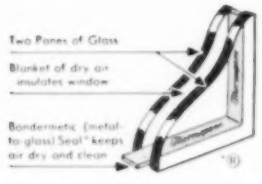

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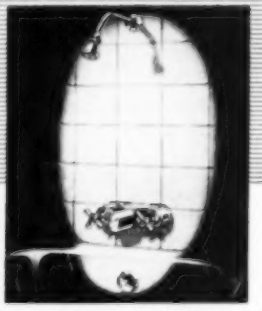

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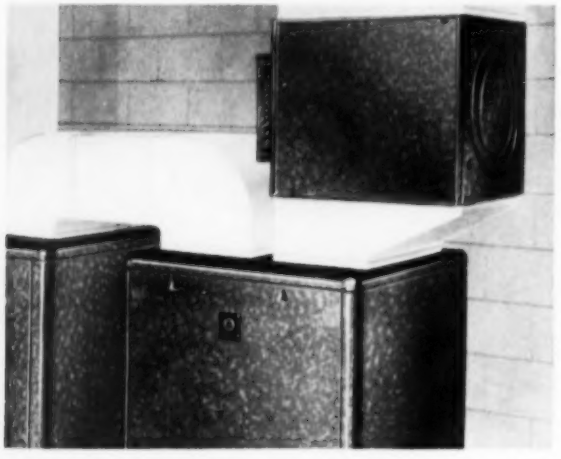

MAGNE-FILTER AIR CLEANER. Designed for easy installation in the return duct of any winter or summer air conditioning system, the Magne-filter is a dry type electronic air filter that traps even the smallest dirt particles, removes pollen, air-borne bacteria, dust and smoke from the air.

REMOTAIRE ROOM CONDITIONER. This remote type unit for multi-room installations heats in winter, cools in summer, filters and circulates the air all year 'round! Individually controlled units use chilled or heated water supplied through a simple piping system from a central water chiller and heating plant . . . no unwieldy ductwork needed.

AMERICAN-Standard

American-Standard
Dept. PA-23, Pittsburgh 30, Pa.

Without obligation on my part please send me your free literature on:

☐ Mayfair Summer Air Conditioner
☐ New Dresslyn unit
☐ Magne-filter Air Cleaner
☐ Remotaire Room Conditioner

Name.....

Address.....

City.....State.....

American Radiator & Standard Sanitary Corporation, Dept. PA-23, Pittsburgh 30, Pa.

Serving home and industry

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B.F.Goodrich
RUBBER
FLOOR TILE

which requirement is "first" on your flooring specification list?

- BEAUTY
- LONG WEAR
- HIGH LUSTRE
- QUIET
- COMFORT UNDERFOOT
- LOW-COST MAINTENANCE

When you specify B. F. Goodrich Rubber Tile, it doesn't matter which requirement is "first" on your list . . . for B. F. Goodrich Rubber Tile can and does meet *all* requirements of so many flooring installations.

You also give your clients *Super-Density* — exclusive with B. F. Goodrich Rubber Floor Tile — which does away with dirt-catching pores, providing a smooth, easy-to-clean surface . . . *Natural Resiliency* . . . which makes it quiet and comfortable underfoot . . . plus beautiful colors and high lustre which last a lifetime.

When you specify B. F. Goodrich Rubber Floor Tile — for business or for the home — you specify a product backed by the famous research of B. F. Goodrich — First in Rubber. See Sweet's Catalog or write today to *Dept. P2, B. F. Goodrich Co., Flooring Division, Watertown 72, Mass.*

3 GAGES AVAILABLE

STANDARD THICKNESSES
1/8" and 3/16" Gage for Commercial Use

SPECIAL THICKNESS
80 Gage for Home Installation

You can depend on **B.F.Goodrich FLOORING PRODUCTS**

RUBBER TILE • ASPHALT TILE • VINYL PLASTIC TILE • RUBBER COVE BASE • ACCESSORIES

Good lighting

becomes dramatic display

This entire office building in California makes a dramatic display out of construction features primarily planned for purely functional reasons. The lighting system is an outstanding example. Ten continuous miles of Westinghouse plastic luminaires are truly an ideal lighting system for daytime work . . . and become a strong merchandising device by night.

The number one requirement was quality illumination for detail office work. This called for semi-indirect lighting. A secondary consideration was to maintain the same high level of balanced design that existed throughout the building structure.

By taking advantage of the 10′ ceilings, it was possible to suspend fixtures 2′ and install a glareless system of continuous semi-indirect lighting. After 3 years of service, this system still maintains a desk-top lighting level of over 40 foot-candles.

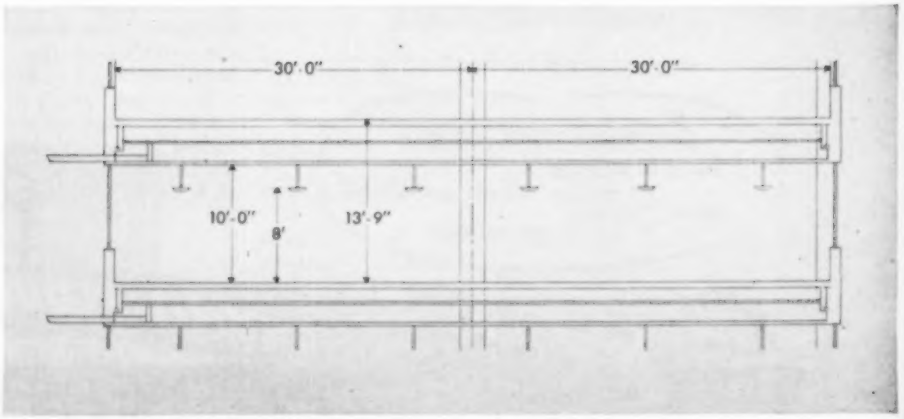
The Westinghouse CD-80 luminaire provides this lighting system. Its styling was right because the dominant horizontal lines of the building exterior are repeated and emphasized by the lighting system on the inside.

Lighting systems can be attractive as well as functional. That's why we maintain a complete and varied line of lighting systems and fixtures to meet the variety of modern lighting problems. Consult us on your next lighting installation. Westinghouse Electric Corporation, Edgewater Park, Cleveland, Ohio. J-04331

YOU CAN BE SURE...IF IT'S

Westinghouse

Luminaires, spaced 10′ apart, are suspended 2′ below the ceiling and are never turned off during working hours. Outside rows of lights are kept burning until midnight for advertising purposes.



Get this Free Booklet, B-4075, Type CD Fluorescent Luminaires for complete details.

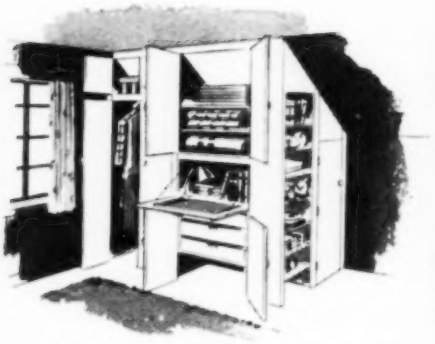
Name.....

Company.....

Street.....

City.....State.....

1. *Flexible Storage Wall.* Simplicity of construction, adaptability mark this striking fir plywood built-in. Provides compact storage in small space. Box-like drawer, desk and cabinet units are interchangeable. Sections can be altered, added or subtracted to fit wall space. Cost of fir plywood to build unit shown..... **$105***



2. *Under-Eave Storage* makes good use of usually wasted space in expansion attics, second floor of story and a half home. Unit can be made to fit any ceiling slope. Fir plywood to build it costs..... **$95***

8 WAYS *to put extra with low-cost*

PLANS AVAILABLE

HERE are eight new ideas you can use to build your sales-story right into the house. For even the most modest home can be lifted above the ordinary . . . given *extra* sales-appeal with low-cost fir plywood built-ins.

Fir plywood built-ins far more than pay for themselves. They sell houses faster—and at better prices. See how little you pay* for fir plywood for each of these built-ins.

And when you plan with plywood, you make the built-in fit the house—*exactly!* No bothersome juggling of "stock" units. Fir plywood is easy to cut, fit, fasten. Paint it with popular modern accent colors to compliment your interiors . . . or use light stains to feature the real wood grain.

Get detailed plans for each of these eight sales-clinching built-ins from your local lumber dealer—or write Douglas Fir Plywood Association, Tacoma 2, Washington. Please order plans by number.

5. *Child's Storage Wall* helps sell parents shopping for new home. Unit has ample room for toys, clothes, bedding. Sales feature: tough fir plywood doors and drawers can't be hurt by playing children. Fir plywood to build it costs..... **$80***

Douglas fir **Plywood**

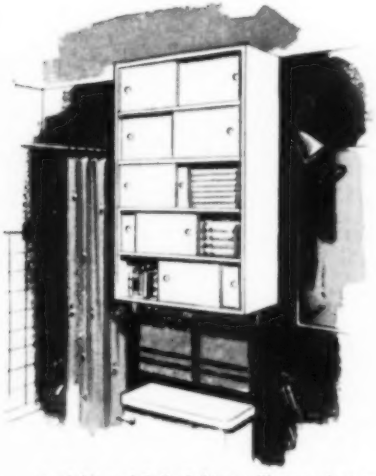
Douglas Fir Plywood PLYPANEL EXTERIOR-TYPE BOND EXTERIOR GLUE

This trademark identifies quality-tested PlyPanel® —the versatile "one-side" grade of Interior fir plywood. Other grades include "two-side" panels for uses where both sides of panel will be seen. For outdoor use, specify Exterior-type fir plywood. EXT-DFPA® on panel edge means 100% waterproof glue.

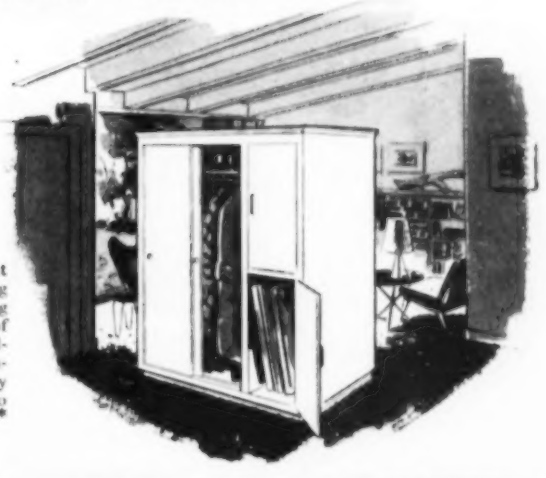
3. *Shelf-Door Wardrobe* combines features of roomy closet, dresser and chest of drawers. Use it to help sell your house faster. Can be used in any room. Build it with fir plywood for only.....**$55***

4. *Sectional Storage Units* can be combined to form shoulder-high storage wall for living room or den. Sections can be pre-built, installed on job. Fir plywood you'll need to build it costs.....**$90***

sales-appeal in your homes fir plywood built-ins



7. *Odds and Ends Cabinet* will appeal to your women customers. Use it to reclaim waste space above water closet or hang in kitchen or utility room for extra storage space. Get fir plywood to build it for only.....**$8***



6. *Island Entry Wall* at right defines entry and living areas without confining either. Adds feeling of spaciousness. Saves building costs by replacing conventional wall and entry closet. Fir plywood to build it costs...**$100***

8. *Demountable Music Wall* is ideal for custom homes built for music lovers. Simple, interchangeable fir plywood boxes are stacked on low plywood table. Holds radio, record player, albums, TV. Fir plywood you'll need to build it costs.....**$60***

*Based on latest available Chicago retail sales for fir plywood compiled by leading trade magazine. prices may vary throughout nation depending upon location and source of supply

Herbert B. Crommett, Architect
St. Paul, Minnesota

Improved way to lay gymnasium floors over slab...

Architect licks with double seal

PROBLEM:

Application of gymnasium floors over concrete slab in contact with the ground is complicated by sweating. If moisture gets to floor, it creates a serious buckling problem.

Job: Prior Lake School
Location: Prior Lake, Minnesota
Architect: Herbert B. Crommett, St. Paul
Flooring Contractor: Luedtke Brothers, St. Paul

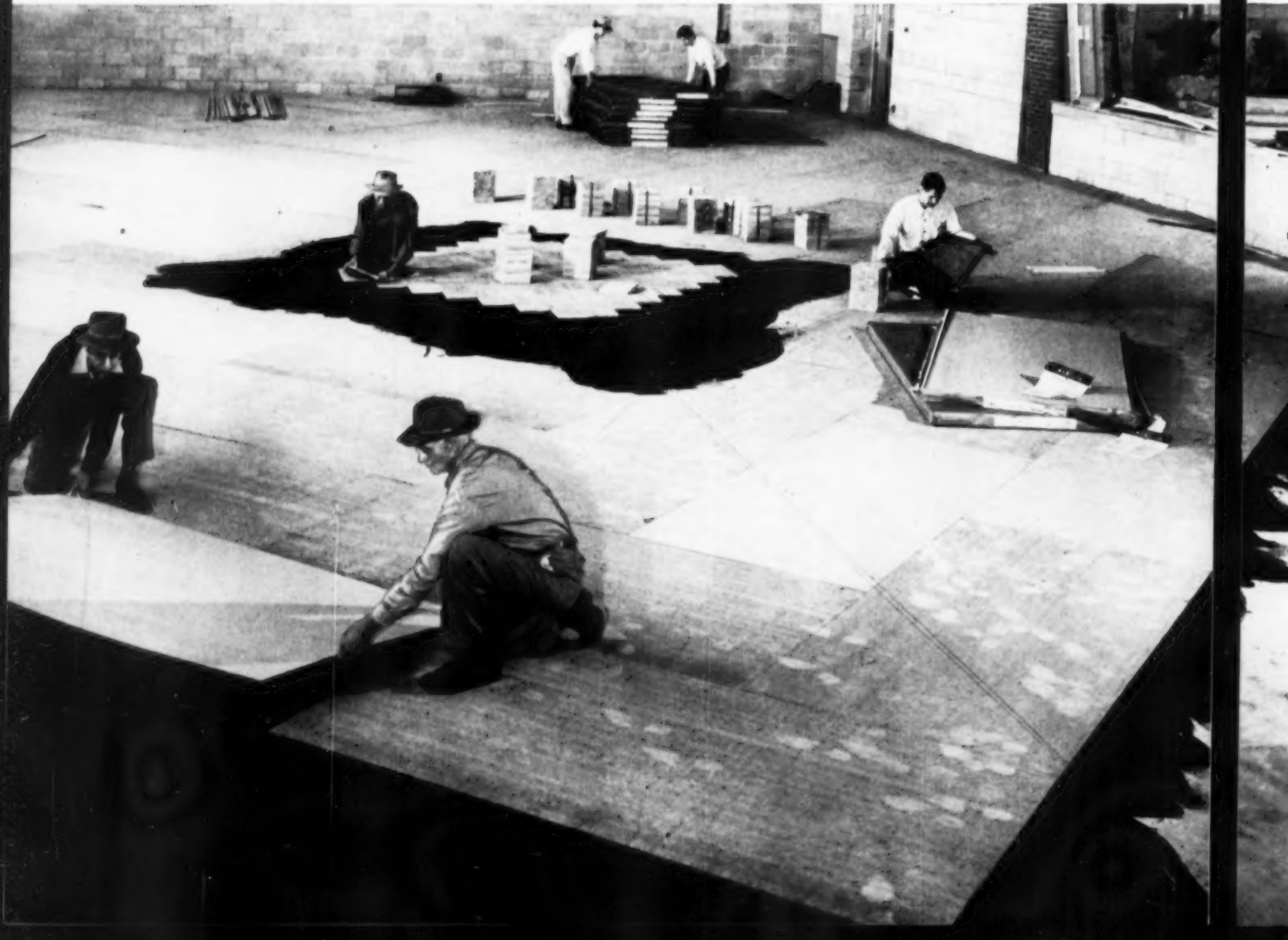
SOLUTION:

A moisture barrier consisting of a double seal of special adhesive sealer and Insulite's asphalt impregnated ½" Graylite as a base under hardwood flooring blocks with interlocking joint.

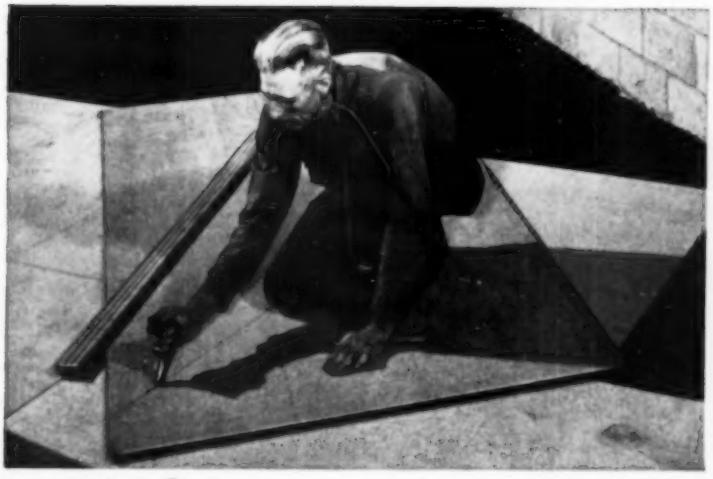
This application method has been used by Luedtke Brothers, St. Paul, for more than 19 years to successfully combat floor buckling due to concrete sweating.

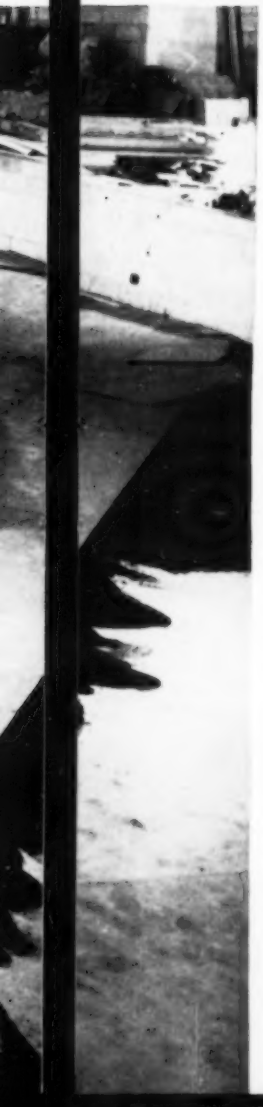
The pictures tell the story.

1. ½" Graylite is laid over adhesive-sealer. Provides excellent cushion for flooring. Eliminates dead spots — provides same rebound wherever ball lands.

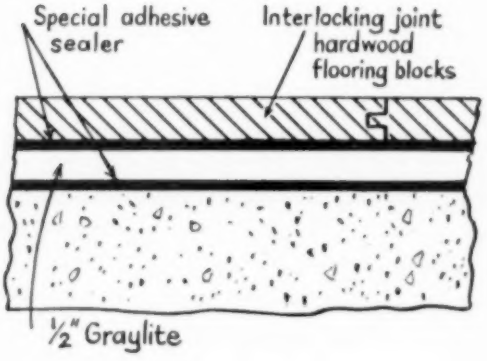


sweating problems and Graylite base!





2. Big 4-foot Graylite sheets are lightweight, clean and easy to handle. Can be cut quickly and easily with fiberboard knife or saw. Available in 6′ to 12′ lengths.



3. Second coat of adhesive-sealer is applied directly over Graylite, providing a double moisture seal. Graylite is moisture-resistant . . . it's waterproofed with asphalt.

4. Interlocking joint blocks go on evenly over smooth Graylite base. Double seal, plus waterproofed Graylite, keeps moisture away from flooring . . . floors lie flat, won't buckle.

Want more information? Have your secretary send a card or letter to Technical Service Department, Insulite, Minneapolis 2, Minnesota. No obligation.

INSULITE AND GRAYLITE ARE REG. T.M., U.S. PAT. OFF.

Build and insulate with double-duty

INSULITE

Made of hardy Northern wood

INSULITE DIVISION,
Minnesota and Ontario Paper Company, Minneapolis 2, Minnesota

Congratulations

TO ARCHITECTS:
Kelly & Gruzen
of New York, N. Y.

Elmwood Shopping Center and new home offices of the Grand Union Co., East Paterson, New Jersey

The Elmwood Shopping Center is an investment which deserves the finest appointments. And Westinghouse is proud to have its Water Coolers included. The Models WA13A, which are used throughout this new building, have ample serving capacity as well as every convenience to insure a continuous supply of cool, refreshing water for all employes. And equally, they help to create an atmosphere for comfortable, relaxed shopping, whether traffic is light or heavy . . . whether the weather is cold, cool or hot.

Many of the new 1953 air-cooled models have a static condenser. Now, all fan noises have been eliminated. All air-cooled pressure models have the new, exclusive *Super Sub-Cooler* which gives greater cooling capacity at lower operating cost. Cooler for cooler, no other make can match Westinghouse for extra capacity or convenience features.

WA13A . . . 13-gallon capacity with the new *Super Sub-Cooler* and static condenser. Stainless steel top. Foot-pedal control. Automatic stream-height regulator. Anti-squirt bubbler. 12 other models available with capacities from 1 gallon to 22½ gallons.

. of course, *it's electric!*

WSB3
3-Gallon,
Bottle Cooler

WS5A
5-Gallon,
Air Cooled

WS8A
8-Gallon,
Air Cooled

WA17A
17-Gallon,
Air Cooled

WW14A
14-Gallon,
Water Cooled

Call your local Westinghouse Distributor for assistance when you're planning any type of building. Many architects specify Westinghouse because our Water Cooler Specialists are available at all times to help you with the complete job . . . from initial specifications to final construction. To get this assistance, check the yellow pages of your telephone directory.

Westinghouse makes a size and type for every need. Specifications, however, need not be altered by a change in models because *all* Westinghouse Water Coolers are compact—beautifully designed. Occupy a floor space of only 14" x 14".

for all your needs, Westinghouse has a complete architect's kit—a file which contains large-sized, readable and accurate engineer's drawings. To obtain these kits for your own file, just drop a card to: Advertising Department, Westinghouse Electric Corporation, 653 Page Boulevard, Springfield 2, Massachusetts.

water cooler models ranging from 1 gallon to 22½ gallons are included in the Westinghouse line. One call answers all your water cooler problems. Or consult your Sweet's File, Section 28c/WE.

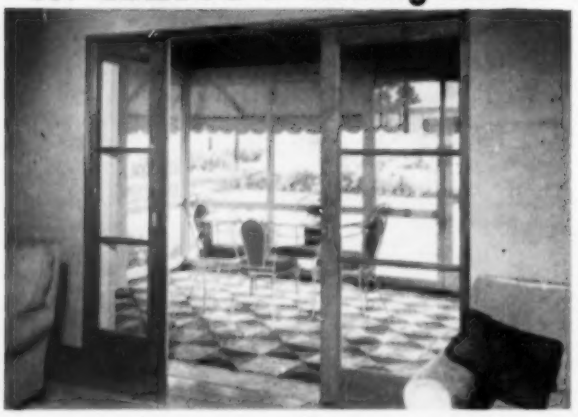
data on every type of Water Cooler is available . . . whether you plan on Bottle, Pressure, Compartment or Remote Types—whether your plans are for an industrial plant, military installation, institution or store, large or small. For any construction now on your drawing board or contemplated for the future, you'll find it profitable to specify Westinghouse, because . . .

YOU CAN BE SURE...IF IT'S Westinghouse

WESTINGHOUSE ELECTRIC CORPORATION
Electric Appliance Division • Springfield 2, Mass.

New Smoothness, New Dependability

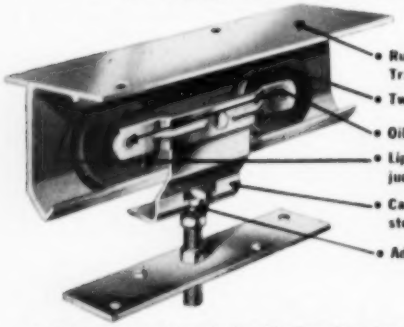
for HEAVY Rolling Doors



at a new low cost!

The HAR·VEY HEAVYWEIGHT

— for rolling doors up to 200 lbs.


• Rustproof ALUMINUM Track, top-mounted
• Twin Formica Rollers
• Oilite Bearings
• Lip prevents roller jumping track
• Cadmium-plated, ribbed steel hangers
• Adjustable

★ Twin rollers of tough, durable Formica give extra smoothness and sure guidance — and V-grooved track prevents "chattering"

★ Self-lubricating oilite bearings assure easier rolling for a lifetime — with no maintenance!

★ ALUMINUM extruded track is extra-strong, rustproof, and top-mounted for quick, easy installation

A HOMESHIELD PRODUCT

You can benefit from the quality features of the new Har-Vey Heavyweight, and profit from its remarkably modest cost as well!

Set of 2 hangers only **$11.00** list delivered
(inc. door guide and screws)

For details see your supplier now or write Hardware Division P

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Beautiful - Permanent

philippine mahogany

Oren Thomas—Architect

This modern, Riverton, New Jersey home is constructed primarily of stone, glass and Philippine Mahogany. Used extensively outside and inside, this fine hardwood blends with the other building materials to create a home of outstanding beauty.

WRITE FOR COMPLETE LITERATURE

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Dept. PA, 111 West Seventh Street, Los Angeles 14, Calif.
PHILIPPINE LUMBER PRODUCERS' ASSOCIATION, INC. Manila

why is U.S. KOYLON foam cushioning so important to you?

Many leading furniture manufacturers and designers have discovered that U. S. Koylon Foam is the ideal cushioning material for every purpose.

It is an evenly whipped foam. Millions of tiny air bubbles uniformly distributed throughout the foam provide more resilience and buoyancy for greater seating comfort.

And U. S. Koylon Foam gives furniture these added selling advantages... dust-free, odorless, non-allergenic, vermin- and moth-proof.

But *most* important to you, U. S. Koylon Foam gives marvelous latitude to furniture design. In molded cushions or in sheets, it's easy to work with, actually saves labor and time. And it maintains your reputation for excellence in the furniture field!

There's no finer cushioning than U. S. Koylon Foam.

Leading furniture manufacturers today feature U. S. Koylon Foam Cushioning

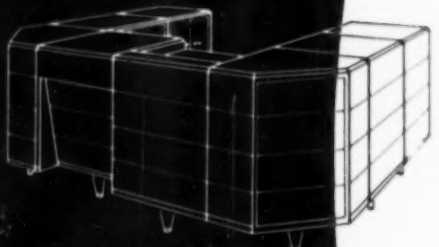
U.S. Koylon® FOAM *Cushioning*

UNITED STATES RUBBER COMPANY
ROCKEFELLER CENTER • NEW YORK

Just as the works
of the masters
are the lifeblood
of library science
so Sjostrom
NEW LIFE Library Furniture
plays a vital role
in the modern library.

Discerning librarians,
architects, and educators
alike prefer NEW LIFE
because its modern design
combines beauty and grace
with sturdy construction
and functional efficiency
to provide for
today's needs
and tomorrow's requirements.

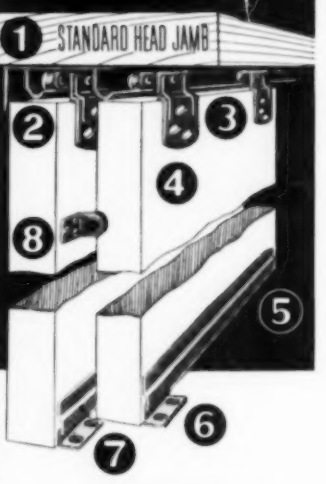
JOHN E. SJÖSTRÖM COMPANY
1717 N. TENTH ST., PHILADELPHIA 22, PA.
Established 1893



For complete information on NEW LIFE Library Furniture, write for Catalog L-50.

Here's Why

LEADING ARCHITECTS AND BUILDERS use and recommend Sterling® 600 SERIES SLIDING DOOR HARDWARE



Sterling® HARDWARE

Saves Time! Saves Money!
Easy to Install and Adjust!

1. **USE STANDARD DOOR FRAME.** No special header construction needed. No grooving!
2. **APRON CONCEALS HANGERS AND TRACK.** May be painted if desired. No extra trim necessary.
3. **ONLY ONE INCH HEADROOM REQUIRED.** No need for extra headroom for hardware.
4. **ADJUSTABLE HANGERS.** Slotted screw holes make it easy to plumb door with jamb.
5. **GUIDE STRIPS** eliminate troublesome grooving of doors. Not visible from the outside.
6. **DOOR GUIDES** can be installed after doors are hung. Slotted screw holes permit easy adjustment.
7. **NO TRACK ON THE FLOOR** to catch dust and dirt . . . floor is clear and clean at all times.
8. **DOOR STOP** keeps flush pull on rear door always accessible. Fingers can't get pinched.

Write for Catalog on Sterling line of Sliding Door Hardware for wardrobes, pocket doors, side doors in home garages and other Sterling products.

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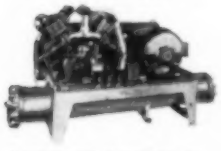


Water Cooled Condensing Units—through 40 tons

Home Air Conditioners—for use with warm air furnaces

SPECIFY *Curtis*
AIR CONDITIONING

Right for fast, easy installation and low-cost, trouble-free maintenance.

Right workmanship—made by a firm with more than 99 years of successful manufacturing experience.

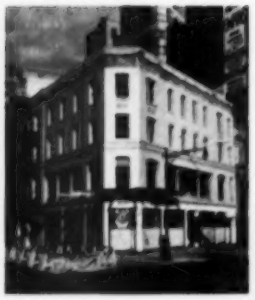
Right price to meet—and beat competition.

Right for the job, whatever the requirements. Curtis units are made in a wide range of types and sizes.

SEE SWEET'S for information on Curtis Air Conditioning and commercial refrigeration equipment.

Write for Your Free Copy of the New Curtis Architects' Air Conditioning Manual. Use your professional letterhead please.

Curtis **REFRIGERATING MACHINE DIVISION of Curtis Manufacturing Company** 1966 Kienlen Avenue, St. Louis 20, Missouri



You can work remodeling magic with architectural terra cotta

AUTOMOBILE CLUB BUILDING
New York, N. Y.
von der Lancken & Lundquist
Architects
Rheinstein Constr. Co., Inc.
Builder

Refacing to the Broadway and 62nd Street fronts is 2" thick architectural terra cotta in units 18" x 36" with rusticated vertical joints. Field color is a soft gray glaze. Horizontal rusticated panels are a harmonizing blue.

Construction detail, data, color samples, estimates, advice on preliminary sketches, will be furnished promptly without charge. Send inquiry to Dept. P.

FEDERAL SEABOARD TERRA COTTA CORPORATION

10 East 40th Street, New York 16, N. Y.
Plants at Perth Amboy and South Amboy, N. J.

Architecturally Alive · Structurally Sound
This is the MORGAN TRI-PANEL Door of Dimension
The "Picture" Door that blends with Contemporary or Traditional Architecture creating a pattern of hi-lites and soft shadows Write for details
Heavy hip raised panels 2 sides
M-1073 1⅜" Interior Tri-Panel
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EXTERIOR LANTERNS
for public buildings . . .
classic and modern
custom-crafted
with distinctive styling.
Inspect the Gruber line.
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You can be quality and design sure when you specify Gruber . . .
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ALUMINUM
DOUBLE-HUNG CASEMENT PROJECTED AWNING
WINDOWS

Lower maintenance costs, no painting, easy operation, years of trouble-free service . . . these are a few of the benefits your clients get with "Quality-Approved" aluminum windows . . . windows that have been tested for quality, strength, construction and minimum air infiltration.

For detailed specifications and names of manufacturers, consult Sweet's 17a/ALU or write direct to

ALUMINUM WINDOW MANUFACTURERS ASSOCIATION
74 Trinity Place, New York 6, N. Y.

Typical installation of USF "Wooster" flush panel, by-passing steel sliding closet doors with matching frame. Not only these doors, but also frames match all other doors and frames in the line.

This is rear corridor entrance door opening into apartment kitchen. Note the modern lines of the door and frame. Corridor doors are insulated against fire and sound transmission.

Every door and frame in the USF line matches exactly whether a swinging closet door, partition or corridor door or sliding closet door, as illustrated.

USF HOLLOW STEEL "WOOSTER" DOORS AND FRAMES

designed the way YOU want them

USF Hollow Steel Doors and Frames are designed primarily for apartments, multiple dwellings and housing projects. They are the only hollow steel doors available in *matching* flush panel design for every interior use from corridor entrance to sliding closet doors. A patented, internally welded box design provides the greatest rigidity, squareness freedom from warpage to be found in any 1⅜" hollow steel door. All welded, one-piece frames in matching design assure simplified installation.

The USF "Wooster" Door for code applications bears the UL "B"-label and is approved by the New York City Board of Standards and Appeals for 1½-hour fire test specifications. Coded doors are insulated against both thermal and acoustical transmission. Non-insulated doors are resonance-deadened.

Sizes range from 1′ 6″ x 6′ 8″ to 3′ 6″ x 7′ 0″ and are furnished plain, louvred, glazed or with interviewer. All doors and frames are mortised and reinforced for hinges and strikes. Doors are mortised for key-in-knob locks of most standard styles and are reinforced for surface applied closers. Standard specifications include baked enamel finish. For further details see us in Sweet's.

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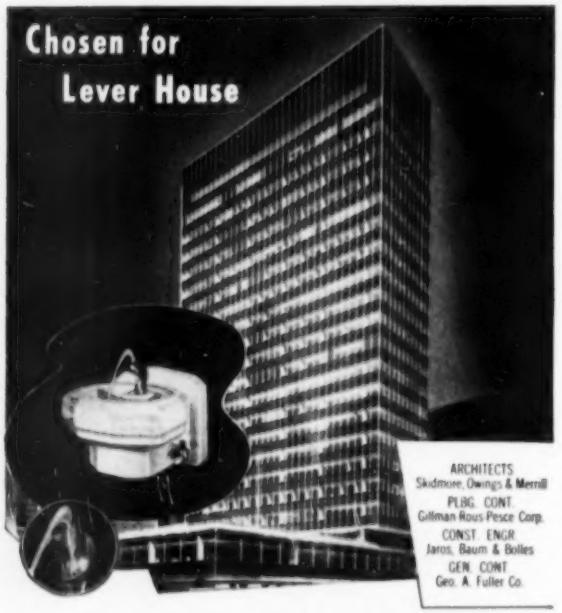

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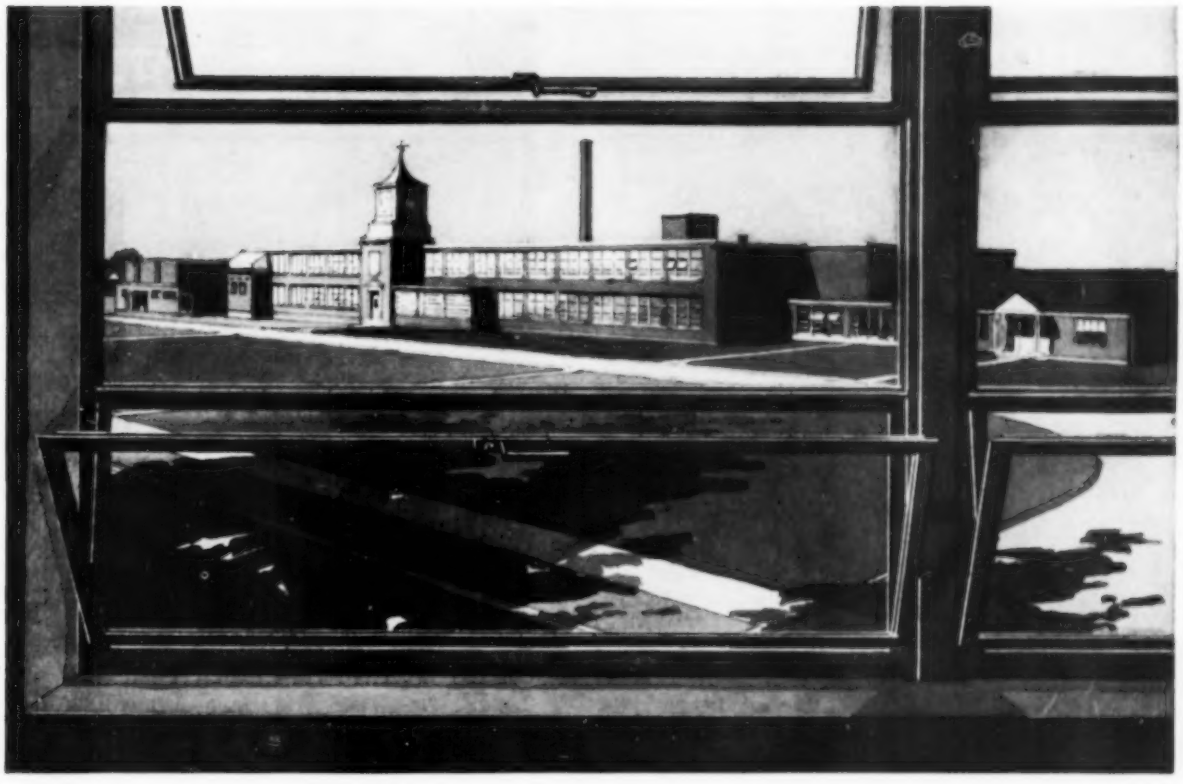

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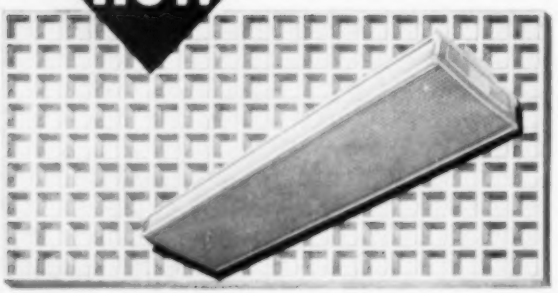

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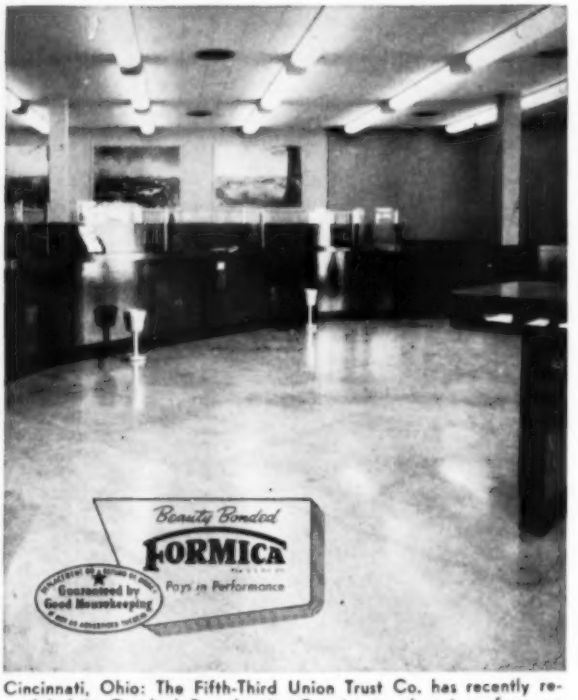

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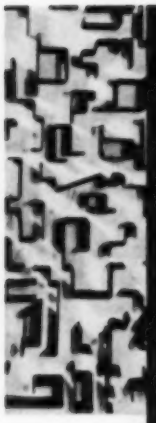

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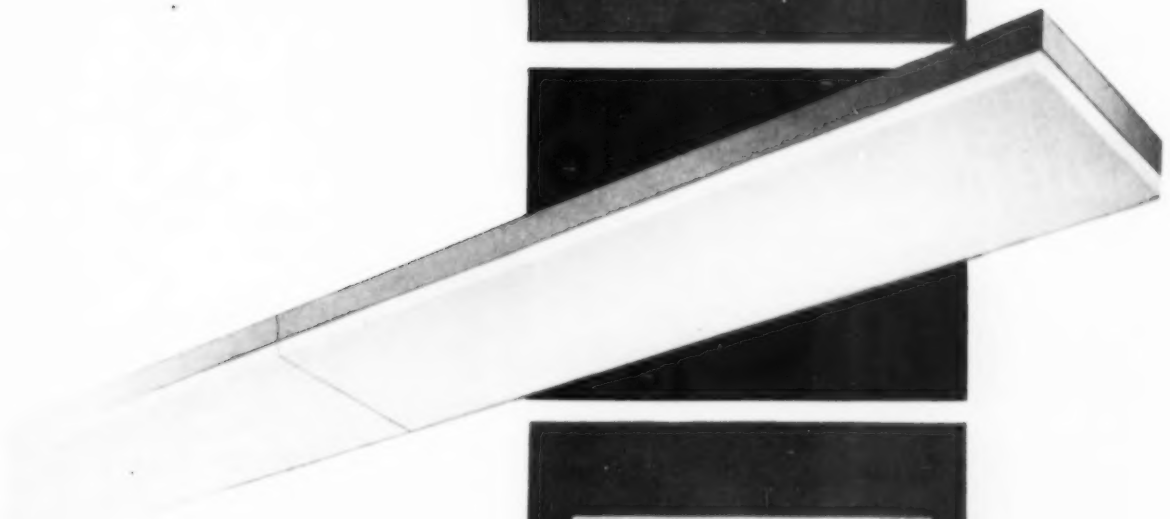

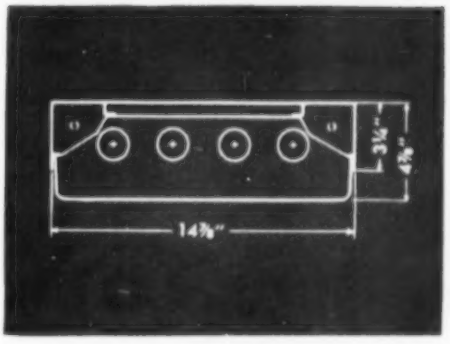

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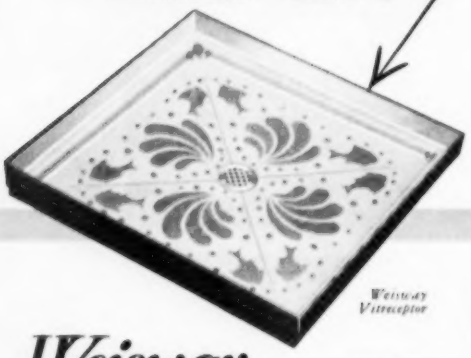

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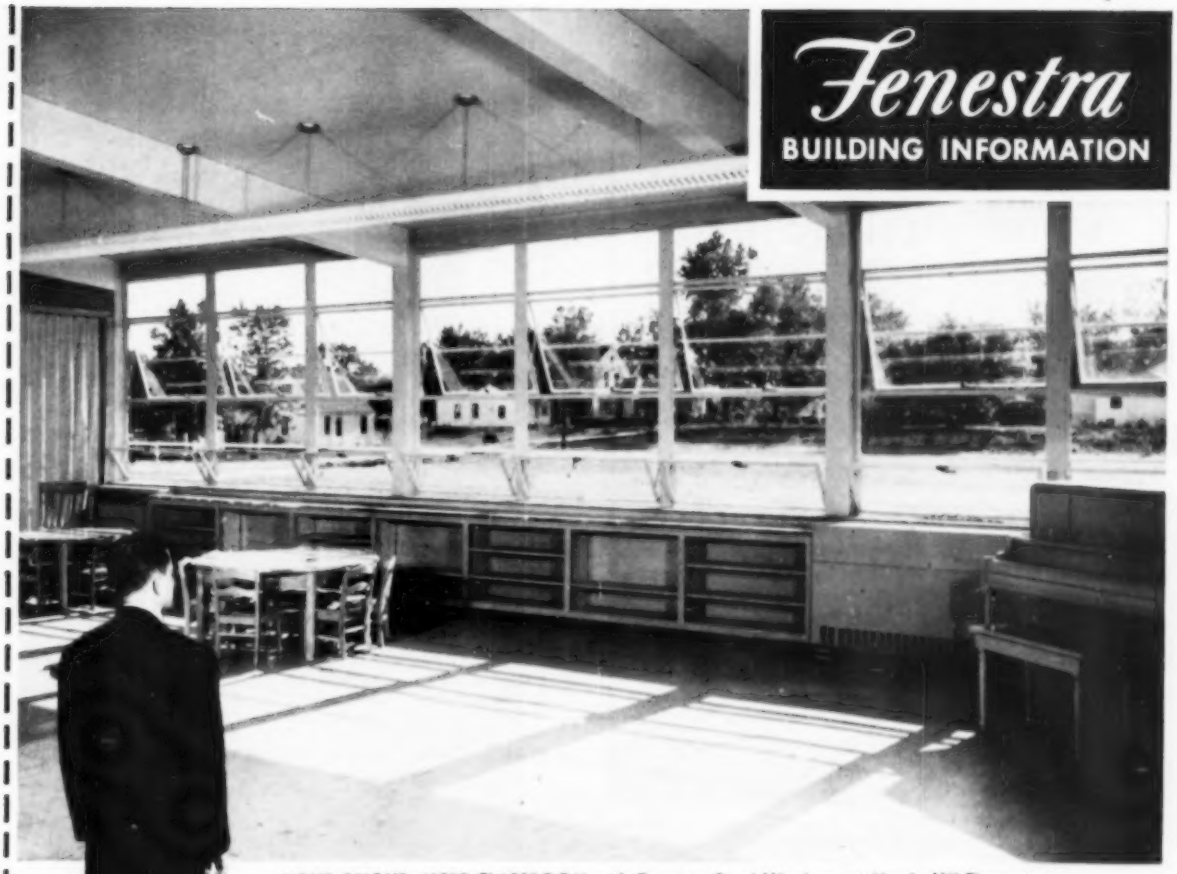

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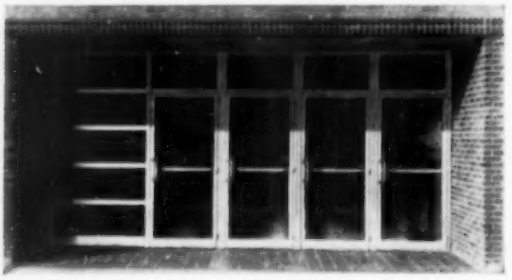

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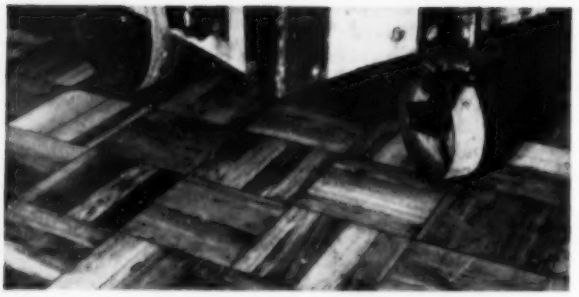

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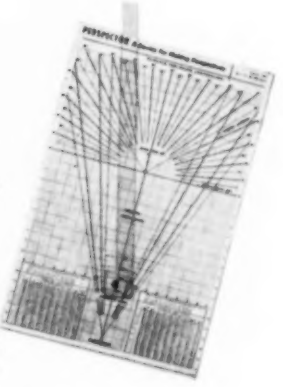

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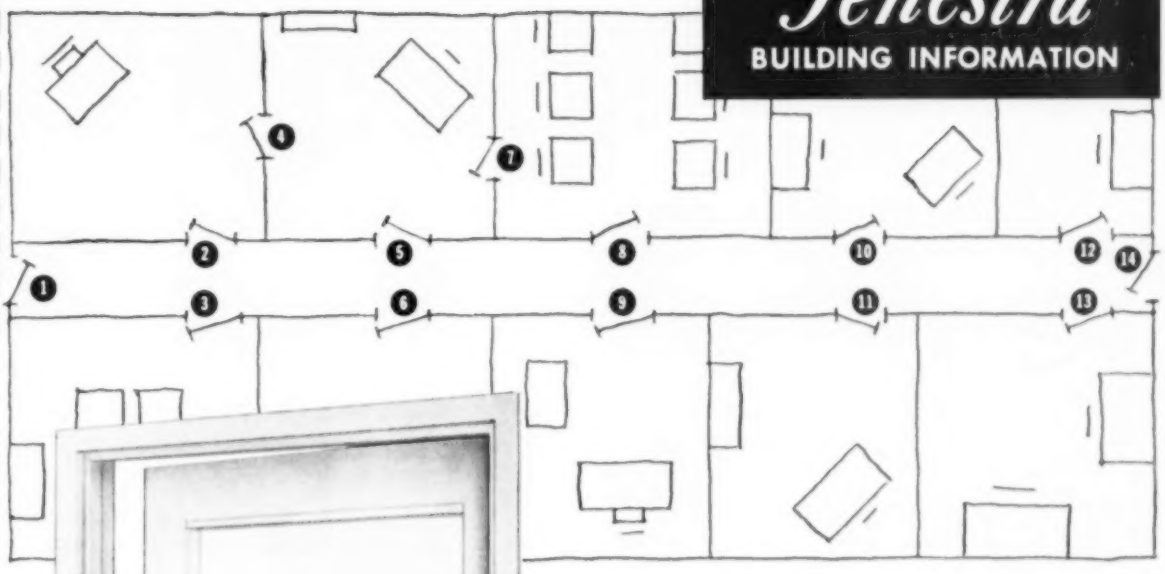

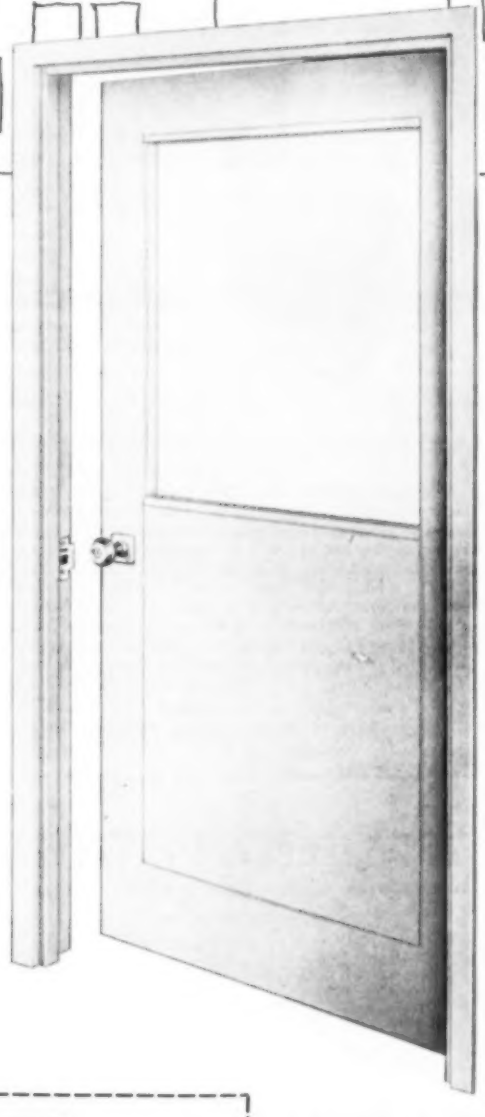

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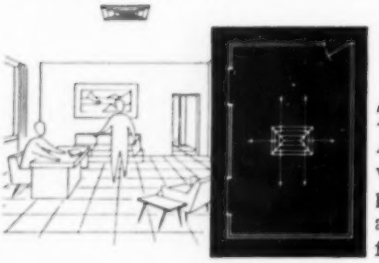

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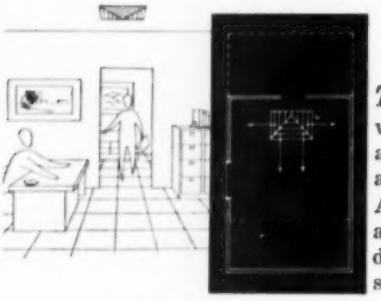

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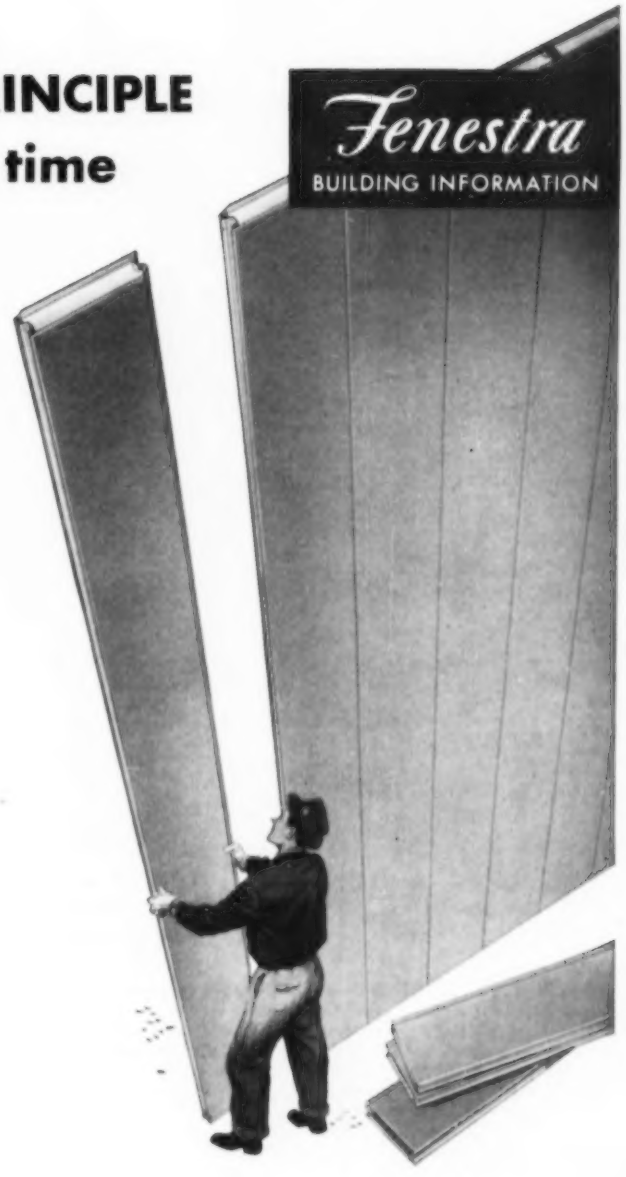

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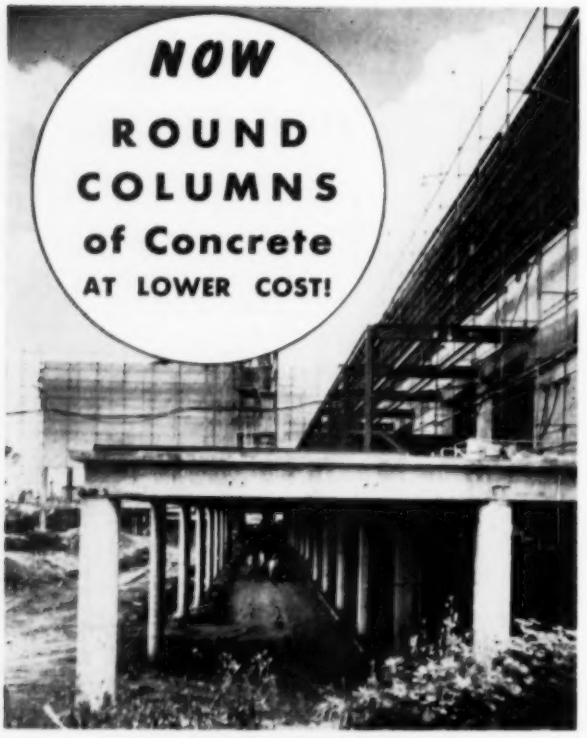

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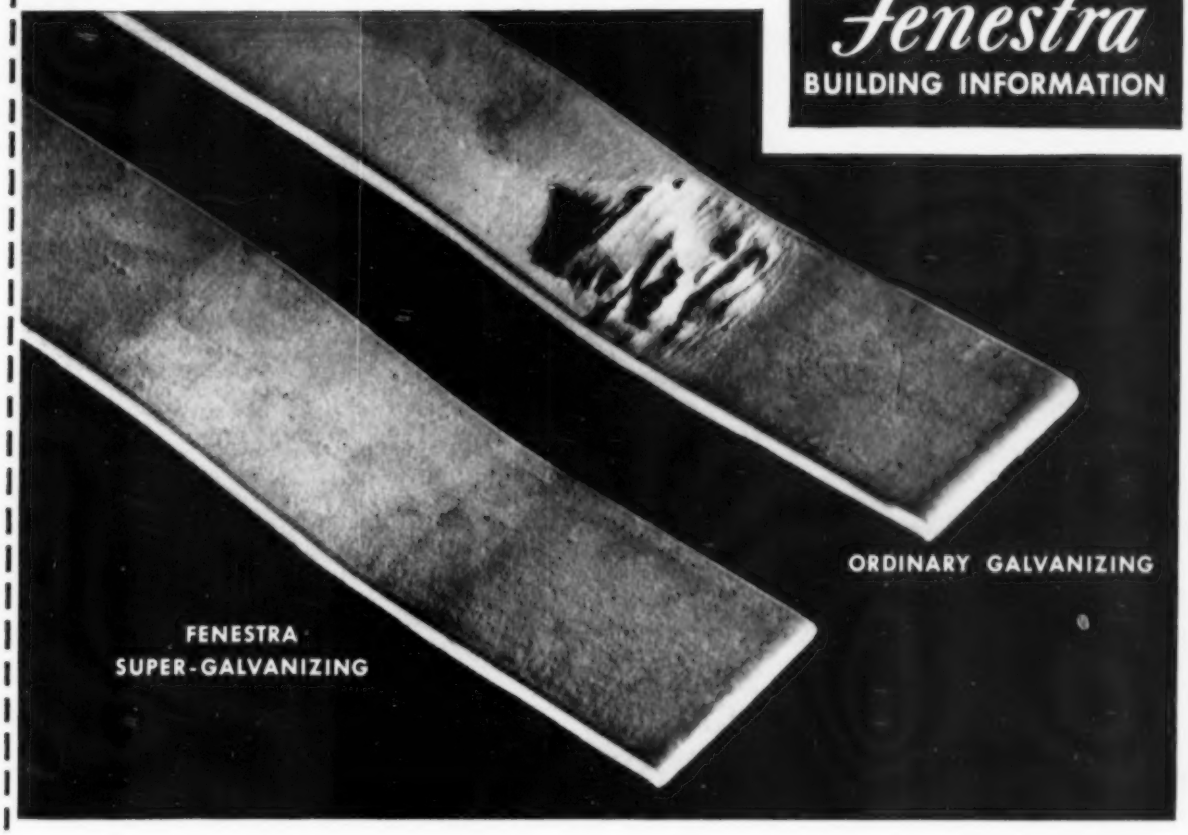

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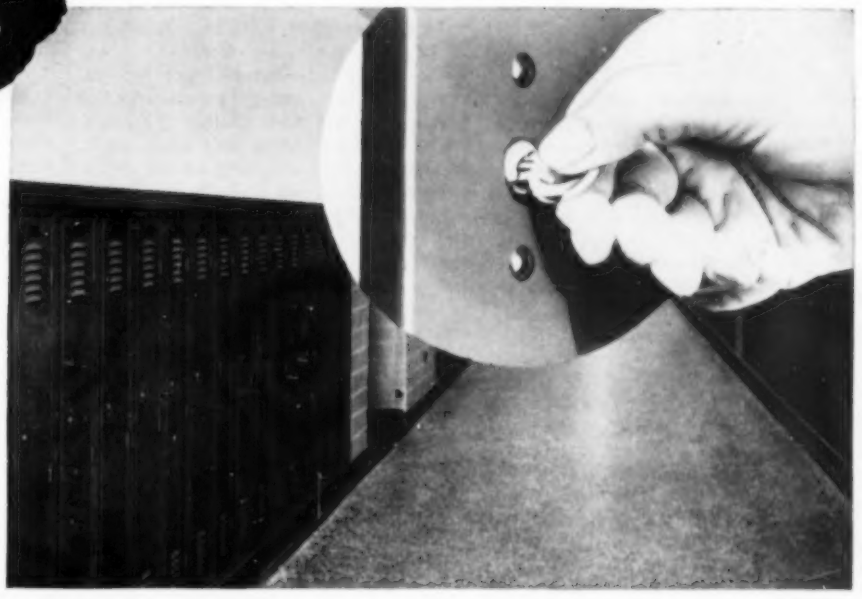

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P.S.

P/A is very proud that several more of its original features have been copied by others. I was going to write a brief paragraph this month on another P/A innovation—the publication of graphic scales (for plans) in the metric system, as well as in feet and inches. The spread of the use of metric measurement throughout the world, and the increased attention paid to this magazine by professionals in other countries as well as the U.S., has made us feel that this innovation is worthwhile, and will add to the usefulness of the material that we publish. Credit to Geks Kidder-Smith for the original suggestion, some time ago. But I have been looking through current copies of other magazines in our field, and I am tempted (I seldom resist temptation) to write a little essay which might be called, with corny but accurate simplicity, *Imitation is the Sincerest Form of Flattery*, or perhaps, *Why Blow Your Own Horn When Others Blow it for You?*

The reason for the essay is that one of the other national architectural magazines has a section in its January issue called *Architectural Interiors*. We had heard that an imitation of P/A's *Interior Design Data* section was about to appear, but we couldn't believe that this sort of blatant copying would really take place so soon. It is flattering that P/A's pioneering move into this field (begun in January, 1952) should have established itself so well that now, one year later, another architectural magazine feels that it must attempt to emulate.

In the same issue of the same magazine there is another new feature which I find even more flattering, personally. A page called *Perspectives* is based on the format and intent of this P.S. page. (Perhaps it is not so flattering at that, because it has taken six years for this emulation to appear.) I should be very happy to tell whoever is writing the new page the difficulties, the pitfalls, and the satisfactions of an outlet like this for informal and personal discussion. It's fun and a relaxing break in the month's work—and I hope he gets as much satisfaction from it as I do.

●

I often hear from architects who are upset because something they have designed, of which they are very proud, has been copied. I don't believe there's any reason to get annoyed about it—it's the greatest compliment a person or an organization can have, and nothing proves more definitely and conclusively the leadership of the original creator. P/A has seen this happen many times. We start something new, which we believe will be useful in the way of architectural journalism, make the preliminary studies, establish it by experiment over the months, find out whether it is appreciated by our readers, explain its aims and its purposes to the advertisers; and then another magazine, taking advantage of all this spade work, will shortly begin a similar feature or department. In time, I suppose, few people remember who first plowed the field. If one would let it, this could become very aggravating. But I prefer to be pleased, and to consider it proof that we are right in the things we are doing. In fact, these others prove it for us.

Up to this point, I think that the most important contribution to journalism for architectural and engineering readers, which P/A instituted—and which was copied, was the *Materials and Methods* section. Back in July, 1945, the new section was started, presenting articles on the technical side of design—use of materials, products and equipment, construction techniques and methods, and incorporating *Product News* and *Manufacturers' Literature* reviews. It took another magazine only ten months (that time) to recognize the importance of the new approach, and in May, 1946, that periodical began its *Architectural Engineering* section. Last year, as you must have noticed, we broke up the *Materials and Methods* section and scattered it through the magazine, coupling technical articles with related building presentations. This has been extremely popular with you readers. The other magazines haven't copied that approach yet, but I'm sure that as soon as we've demonstrated to their satisfaction that it works, they'll be along.

I might list a long series of things that first *Pencil Points* and then PROGRESSIVE ARCHITECTURE instituted, which were either copied directly and precisely or which inspired imitative approaches elsewhere. For instance, *Critiques*, *Fields of Practice Studies*, *Selected Details*, *Data Sheets*, and so on, and so on.

What it all boils down to, we tell ourselves, is that P/A is the magazine closest to the interests of the practicing profession. P/A's Editors were trained as architects, and we spend our time making sure we understand the problems of the practicing and working profession. So we come to certain conclusions about editorial policy which are based on understanding and professional reality, and carry them out to the best of our abilities. We believe that you people want and can use material on every aspect of your daily work—and we try to give it to you. We *must* be right—not only the circulation figures show it; the imitation on the part of others seems to prove it conclusively.

●

I think, however, our competitors have not understood the policy in its entirety. For their benefit—because I think they are missing some bets—let me recapitulate. We believe that our professional readers are interested in preliminary design, final design, specification writing, detailing, interior design, use and selection of products, heating, lighting, acoustical and other technical problems, construction techniques, design philosophies, related design fields such as sculpture and landscape architecture, architectural education, public relations, architectural business practice and legal problems. And we give them material on all these subjects. We still have, exclusively, such features as:

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and a number of other items, as well as our entire method of presenting architecture—fully, as critically as possible, comparatively, with a technical analysis along with the building presentation.

And I might say, without tipping our hand in detail, that there are several special issues coming along soon, as well as some new features and departments that we aren't talking about yet. We'll keep the imitators jumping this year! And I promise you that we *do* consider the imitation flattery, and will allow it only to inspire us to keep ahead of the field, to keep on being innovators, to continue to study and research to find constantly new ways to serve our large audience.

●

I want to publicly welcome Bob Felson, who is a new Associate Editor of P/A. Bob is a Columbia architectural graduate, with a good deal of practical experience behind him as he goes into architectural journalism. His addition to the editorial staff should help us produce a more rounded, thoughtful, useful magazine. Again, thanks to you wonderful people who have given us such support in the last few years that it makes it possible for us to go ahead to bigger and—we hope—better things.

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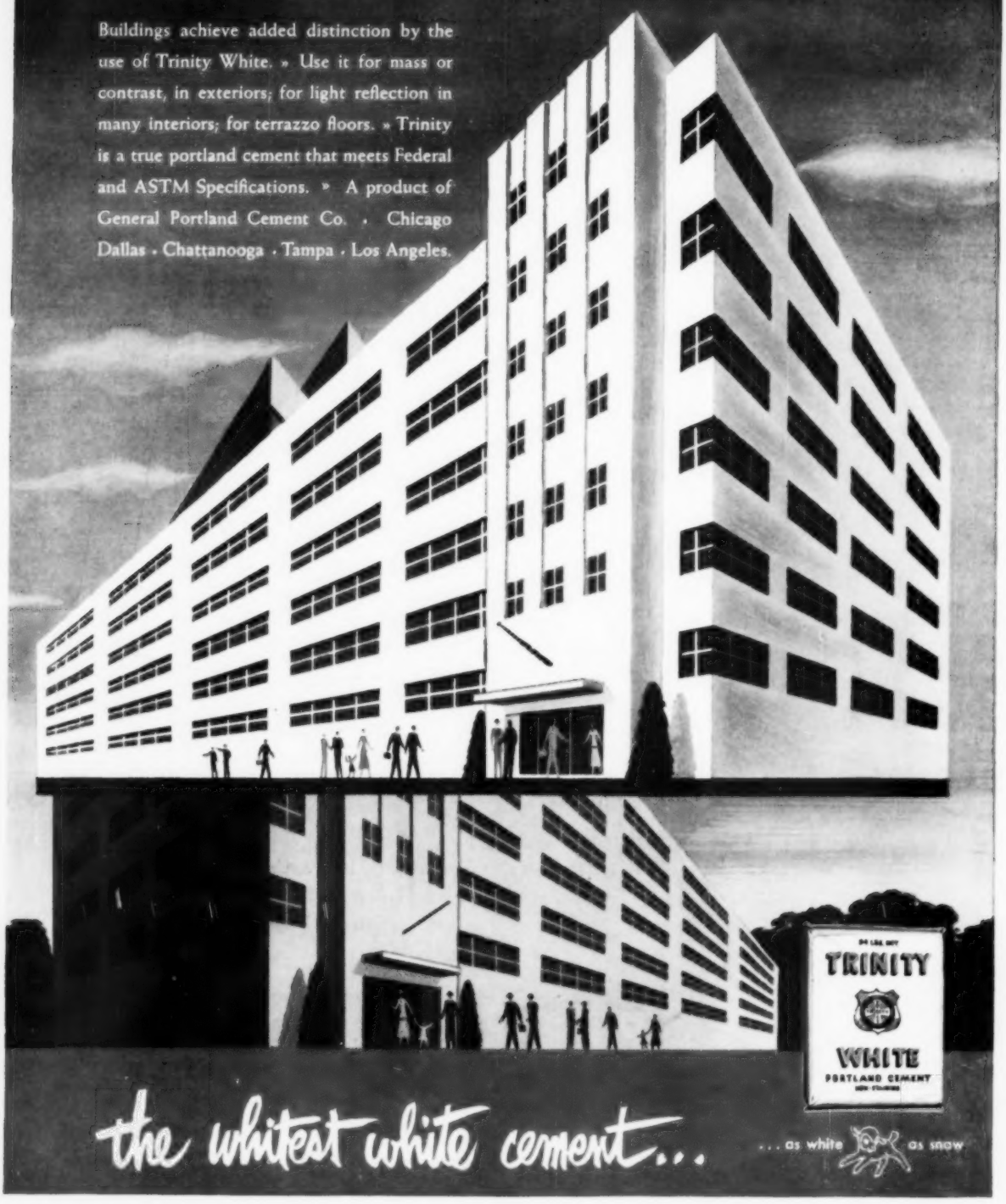

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